ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

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MacLaren News Print Paper Mill Nearly Ready

New Plant of James MacLaren Co., Ltd., Situated On Lievre River, at Masson, Near Hull, Quebec, to Begin Operations in November—Initial Production Expected to be About 175 Tons Daily, or About 70 Per Cent of Total Capacity—Merger To Be Known as St. Lawrence Corp.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 15, 1930.—It is stated here that the James MacLaren Company has made arrangements with the St. Lawrence Corporation for the distribution of the news print to be manufactured at the new mill which the company is shortly to bring into operation. The mill, which is situated on the Lievre River at Masson, near Hull, Que., is expected to be placed on a producing basis in November with an initial production of about 175 tons of news print, or 70 per cent of capacity. Large piles of pulpwood have already been accumulated at the mill. The buildings, by their solidity and size, make a most impressive appearance in this hitherto rather neglected section of country. From the point of view of architecture and construction they represent the last word in modern practice, and the equipment is a model of its kind in efficiency and labor saving appliances. Altogether it is estimated that about $6,000,000 will have been spent in bringing the plants into producton.

The St. Lawrence Merger

In connection with the merger of the St. Lawrence Paper Mills Company, the Brompton Pulp and Paper Company, and the Lake St. John Power and Paper Company into an organization known as the St. Lawrence Corporation, the announcement is made that the latter has extended its offer to the shareholders of the component companies from September 9 to October 9. The offer is to issue stock of the St. Lawrence Corporation in exchange for securities of the companies. Already, it is stated, a large majority of the shareholders of each company have turned their stock in for conversion. When the exchange of shares has been completed the resulting consolidation will have a productive capacity of 1,000 tons of news print per day, 100 tons of Kraft, and 70 tons of boxboard.

Funded Debt

The Corporation will have outstanding a funded debt of $8,000,000 comprising Lake St. John's bonds and mortgages; $14,225,850 of St. Lawrence Paper Mills preferred; $1,000 of Brompton preferred (old company); $15,000,000 of its own preferred stock, representing the exchange of Brompton common, and 585,000 shares of no par common, represented by the exchange of the common stocks of St. Lawrence Paper Mills and Lake St. John Power and Paper common and preferred shares.

Of the unissued shares of St. Lawrence Corporation, totaling 1,415,000 there will be reserved 222,500 for exchange into shares covered by the outstanding subscription warrants and options to subscribers of St. Lawrence Paper Mills, and 600,000 shares will be reserved to meet the conversion rights of class "A" preference stock.

The Fraser Companies

The *Canada Gazette*, official organ of the Canadian Government, carries an announcement to the effect that the Fraser Companies have obtained a loan from a banking syndicate of $4,000,000, which loan will be secured by collateral deposit of $5,000,000 of general mortgage bonds of that company. This loan will mature July 1, 1932, at which time the companies' $3,000,000 of 6 per cent convertible gold notes mature as well. This financing has the effect of materially increasing the companies' net working capital and providing for all construction liabilities.

This announcement is taken here as disposing of the rumor of a possible reorganization of the companies as a result of difficulties encountered through the expansion program, combined with depressed market conditions.

News Print Production for August

Production of news print in Canada during August 1930 amounted to 202,043 tons and shipments to 197,870 tons, according to the News Print Service Bureau. Production in the United States was 101,601 tons and shipments 99,236 tons, making a total United States and Canadian news print production of 303,644 tons and shipments of 297,106 tons. During August, 24,663 tons of news print were made in Newfoundland and 862 tons in Mexico, so that the total North American production for the month amounted to 329,169 tons.

The Canadian mills produced 64,146 tons less in the first eight months of 1930 than in the first eight months of 1929, which was a decrease of 4 per cent. The United States output was 39,629 tons or 4 per cent less than for the first eight months of 1929. Production in Newfoundland was 22,589 tons or 13 per cent more in the first eight months of 1930 than in 1929 and in Mexico 3,059 tons less, making a total decrease of 84,245 tons or 3 per cent.

During August the Canadian mills operated at 66.4 per cent of rated capacity, United States mills at 72.0 per cent and Newfoundland mills at 103.0 per cent. Stock of news print paper at Canadian mills totalled 59,007 tons at the end of August and at United States mills 30,691 tons, making a combined total of 89,698 tons which was equivalent to 5.2 days' average production.

Demand For Paper Expanding In Philadelphia

Fine Paper Market Experiences Greater Activity Than of Late—Bonds and Writings Moving In Satisfactory Volume—Cheaper Grades of Book Paper Enjoying Wider Distribution—Tissues and Vegetable Parchments Firmer

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 15, 1930—Growing demand for paper has been noted since the first of the month and with the past week there was further expansion of business as manufacturers were employed in meeting slowly improving conditions in the distributive branch of the industry. The growth of small lot orders has been increasing the volume of paper demanded from the manufacturers and while bulking larger, normal seasonal traffic from the mills is still lacking in this location, with the exception of a few specialized lines. The mills have been going ahead with preparations for extension of production. While there is keen competition among the mill representatives and manufacturers, there is not the price cutting that marked the early spring market and the firmer prices would indicate absence of accumulations in the mills.

There is much selling of kraft on brokerage basis by dealers, and the mills are co-operating with the trade in disposing of accumulations under such terms in order to stabilize the market and prevent flooding of the local field with the lower priced grades. Paper boards are selling as low as $31 for chip, while the generally accepted values of the market of today prevail around $35 for chip and $37.50 for news. There is but little demand even at these attractive prices. Box manufacturers, however, look for improved business.

Fine Paper Demand Grows

Fine paper demand continues to grow in this section with the cheaper grades of book paper enjoying wider distribution among the printers and publishers. There is quickening of shipments in the better grades and in coated papers. Better grades of bonds and writing, too, have been slowly improving. Local manufacturers of high grade fancy finishes in writing papers report a very good summer demand. Tissues and vegetable parchments are firm and are among the grades that have been holding in both shipments and prices throughout the past season.

A notable improvement has followed the awakening of mill demand for all grades of paper stock since the first of the month and while the better grades were purchased in the early days of September there was a quickening of shipments of the common lines which have long been dragging along. The result of the buying movement has been a rise in the price of all grades of one dollar per ton. All available supplies of the common grades are being moved with a rapidity that surprises the local wholesalers who have been experiencing difficulty in disposing of the cheaper stocks. Rags are in slightly better request but have not moved proportionately.

Paper Trade Association Meeting

The Philadelphia Paper Trade Association meets on Monday at a place not yet designated. The opening session for the Fall will be a joint gathering of the fine paper and wrapping paper divisions which has been specially called by President W. S. Wilcox, just returned from a summer tour of Europe, and who is associated with the Wilcox, Walter, Furlong Company.

Paper & Twine Association's Opening Session

Opening session of the Philadelphia Paper and Twine Merchants Association will be held at the Adelphia Hotel, at the noon hour, when luncheon will bring together the members of the mill agencies of the Quaker City industry and those dealers who specialize in wholesale paper trading and twine dealers. The meeting is scheduled for Friday, September 19. This initial gathering of the wholesalers in twine and paper is called by the president of the organization, George K. Hooper, of the Hooper Paper and Twine Company. There will be a series of educational meetings to be followed monthly when prominent speakers from various trade manufacturing concerns will talk.

Wholesale Waste Merchants To Gather

Members of the wholesale waste trade of Philadelphia will hold their first Fall meeting at the Lorraine Hotel, Broad street and Fairmount Avenue. President Thomas A. Kenny, of the Wholesale Waste Merchants Association of Philadelphia, and of the International Trading Company, has called a joint dinner and business session when all branches of the waste trade, including paper stock and rag dealers, will assemble at the Fall opening on Wednesday of this week.

Direct Mail Leaders Selected

The committee appointed to select the foremost specimens of direct mail advertising campaigns for the year 1929-1930 will meet on Friday of this week at the headquarters of the D. L. Ward Paper Company, 28 South 6th street, when the group of fifty foremost direct mail matter to be grouped in the exhibits for the coming year, is to be chosen. This year the Direct Mail Exhibit is sponsored by the Direct Mail Advertisers Association and will be sent throughout the trade for displays in paper houses and advertising clubs in all parts of the country. In former years the Direct Mail Leaders Exhibit was directed and fostered by the D. L. Ward Company, and was permanently displayed in the Graphic Art Room of the local paper house, where it was open to exhibition and viewed by those who were interested in the perfection of direct mail advertising, its paper and printing qualities, and usage of such matter by the leading direct mail users of the nation. The campaign conducted during the year by concerns using direct mail advertising were assembled and inspected by the committee selected to choose the foremost specimens of fifty campaigns. The committee which will select this year's exhibit is composed of George W. Ward, of the D. L. Ward Company; Homer J. Buckley, Buckley, Dement Company, Chicago; Tim Thrift, American Sales Book Company, Elmira, N. Y., and David R. Rutter, assistant advertising manager of the Dupont Company, Wilmington, Del. The first exhibit of the Graphics Arts leaders will be held at the coming convention of the Direct Mail Advertisers Association, at the Schroder Hotel, in Milwaukee, from October 1 to 3. It will from there be sent to various advertising clubs throughout the nation and to paper houses, under direction of the Direct Mail Advertisers Association. The collection of these direct mail campaigns was the idea of George W. Ward, of this city, who undertook the assembly of the exhibit about seven years ago and who has been making annual collections and exhibits of the Graphics Arts leaders since.

Scott Paper Co. Starts Contest

A contest which will involve cash awards to paper distributors and to sales and executives of various branch offices of the nation for the Scott Paper Company, of Chester, Pa., was inaugurated September 8. The contest will be designed to stimulate business and to attain a $1,000,000 sales record for each month during September and October. There will also be a 5 per cent cash allowance for distributors and sales representatives through-

FROM MONDAY MORNING

TO SUNDAY MORNING.....FULL WATER REMOVAL

On machines equipped with Vickery Felt Conditioners, shut-downs for washing and roping never occur. Felts never cause an interruption in production, because they are always clean, always capable of full water removal.

Let us show you, with a trial installation, what Vickery Felt Conditioners will do in your mill.

BIRD MACHINERY

BIRD MACHINE COMPANY

South Walpole, Mass.

VICKERY FELT CONDITIONER

4130

out that period as well as cash prizes to be awarded to those who reach the highest sales individually. The sales contest is extended to all parts of the nation and was started here at the Philadelphia headquarters in the Packard Building last week, simultaneously with the national sales campaign on Scott products.

Saxe Paper Co. Expansions

With the developing of the sanitary products department of the Saxe Paper Company, 320 Race street, and the extension of business, there has been effected in the forces of the firm changes that will provide for better services in sales and shipments that have materially increased with the innovations. Hugh Cline, Jr., who has been associated with the staff for some time and who for the past six years has been outside salesman, has been promoted to sales manager, and has two additional sales representatives on the force. The new salesmen are A. J. Kaufman, who has been associated with the converting branch of the industry as head of the paper box concern bearing his name, and James Graham, who will cover outside sales territory in the city. Mr. Kaufman will specialize in paper specialties, while Mr. Graham will generalize in wrapping paper and allied lines.

Hinde & Dauche Co. Holds Sales Meeting

Sales conferences with the executives and staffs of the Philadelphia, Baltimore and Richmond offices of the Hinde and Dauche Paper Company, of Sandusky, Ohio were staged at the Chesapeake Club in Baltimore, when the group of representatives in these sections were entertained at dinner and then heard the executives and Vice President J. H. Macleod from the main offices, outline sales plans for the coming season and review the sales and business developments of the past year. The sales conferences were held under the supervision of Vice President in Charge of Sales Macleod and General Sales Manager Russell Whitney, of the Sandusky headquarters. Harry P. Johnson, sales manager of the Philadelphia branch offices of the Hinde and Dauche company journeyed to Baltimore to attend the sales meetings.

Morice Jute Mills Discontinued

The Morice Jute Mills which have been in operation here for many years have been dissolved and the equipment, raw materials, and stocks of manufactured cords and twines have been acquired by the American Manufacturing Company, with headquarters in Brooklyn, N. Y., with branch mills located here at Front and Shunk streets. The Philadelphia mills of the American Manufacturing Company, under management of Byron Clark, have been expanded and the units of the Morice Jute Mills installed in the plant and the materials of the latter concern removed to the Front and Shunk streets mills. With the dismantling of the Morice Jute Mills the plant has been abandoned and the company dissolved. John Morice, former president and owner of the Morice Jute Mills, of New York City, has retired from the business. The former business of the Morice Jute Mills has been acquired by the new owners of the equipment and materials who will develop and expand the twine manufacturing in this city. The American Manufacturing Company makes a general line of twines and cords, of all grades.

Most modern bags of the types adapted for the use of bakers will be shown in the exhibit staged at the Bakers Convention to be held in Atlantic City at the Convention Hall from September 22 to 27 under the supervision of the local bag manufacturing concern Thomas M. Royal & Co., Inc., 7th and Grange streets, one of the largest converters of bags in the country. The exhibit will include the newest development in cellophane combinations with paper sacks and known as the Celloface Bags, which are the exclusive patents of the Royal Company. The exhibit will be under the direction of the local officer of the company, Vice-President and General Manager Gordon H. Friend and Sales Manager E. J. Hamilton, who will be present at the convention next week. Thomas M. Royal, head of the firm, who has been summering abroad will return from Europe next week.

G. W. West 60 Years With Oglesby Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, September 15, 1930.—Too few men are given the privilege of serving one concern for 60 years but that distinction belongs to George W. West, a resident of Tytus avenue, Middletown, who for that length of period was identified in different capacities with the W. B. Oglesby Paper Company.

This fact developed during the past week when he observed his 86th birthday surrounded by his family and friends at his comfortable home.

Fifty-two years of the 60 spent with the paper company were passed in active service. During the past few years, following a severe illness, he has been on the inactive list but he is now physically alert. Mr. West reviews events of the past with a lucidity demonstrating his keen mentality. He tells of interesting stories of the Civil War, when a boy he was captured and imprisoned. He was serving with Company C, 93rd Ohio Volunteer Infantry, an organization that became famous in the conflict, and few survivors of whom are living, mostly in the Miami Valley, however, as this was distinctively a Southern Ohio regiment. This regiment in conjunction with another from Indiana had been assigned to capture, or rather pursue John Morgan, Confederate raider, whose sudden appearance in this section created a furore during the war.

Mr. West's regiment followed Morgan to Lexington, Ky., where Morgan met reinforcements and the combined Confederate forces were too much for the Yankees. West was among those taken prisoner. He escaped from the detention camp but was captured and with others was taken to Columbus, Ohio, waiting exchange. This event never materialized, however, and after many delays and varied experiences, West was discharged.

Later he obtained employment in paper mills, working in Cleveland, Decatur, Ill., Rialto in the southern part of the Miami Valley and Miamisburg, near Dayton. He returned to Middletown in 1866, working in the Sutphin-Wrenn mill for about 18 months.

At that time his position was back tender to his brother who ran the machine. On his 26th birthday, he became associated with Oglesby, Barnitz and Tytus Company, as the firm was known at that time.

The company operated two machines, one of which made brown wrapping papers, known as the Brown Mill, and the other manufactured book and blotting papers. The latter was designated as the White Mill.

Mr. West received felicitations from his associates at the Middletown mills and from his many acquaintances in other paper mill establishments in the Miami Valley, on the occasion of his 86th birthday.

New Suction Sheet Machine

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 15, 1930—The need in the paper-making research at the bureau for a laboratory test that is analogous to paper-mill processes has led to the construction of a suction sheet machine and the development of a method of preparing fiber sheets. The test procedure relates to the forming of the sheet on the mold and the subsequent operations of couching, pressing, and drying.

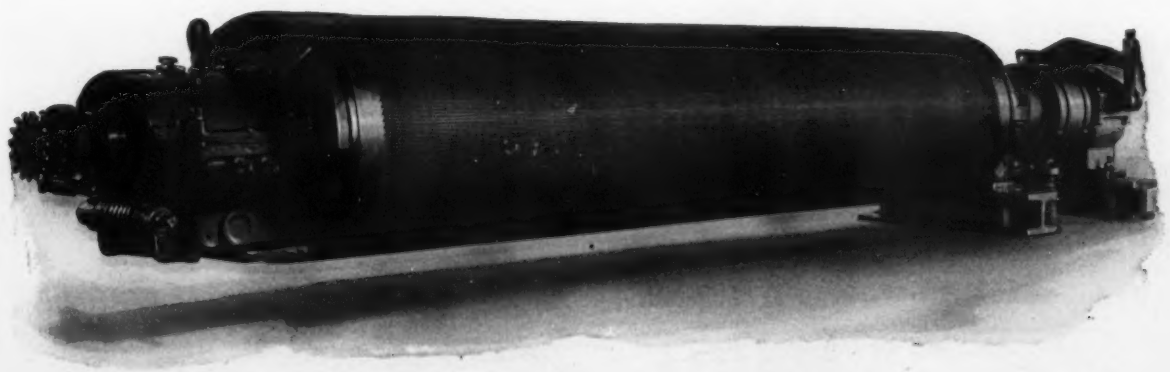
The construction of an agitator for defibering the pulp samples, and of a sheet mold, both of which were devised especially for use in making the test sheets, is described in detail. Experimental data are included on the relative efficiency of blotters and felts in removing the sheets from the wire screen on which they are formed and in absorbing the excess moisture from the sheets.

Test data on the finished papers show that the fibers are uniformly distributed in sheets made by the method described, and that the different sheets of a series made from a given sample of stock are in close agreement and can be duplicated as desired. The personal equation is reduced to a minimum and comparable results are obtained by different operators.

DOWNINGTON
KILBERRY PATENT SUCTION ROLL

Cantilever

The illustration shows a Suction Couch Roll 36" diameter, 166" drilled face, of the overhung, self-supporting type. This roll was built for a Pacific Coast Mill and is arranged with rear end suction pump connection. It has all the advantages of the Downingtown type of roll, namely, small bearings, front end adjustments for deckles and packing strips, means for removing packing strips through ports in end heads, etc., *plus* the cantilever feature. For further information, address the Downingtown Manufacturing Co., Downingtown, Pa.



Activities of Fox River Valley Paper Mills

Rhinelander Paper Co. to Construct New Wood Room Immediately Facing Wisconsin River—Thilmany Pulp & Paper Co. Also Building New Wood Room—Menasha Paper Corp. to Start Operations With Two Machines Making Straw Board

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 15, 1930—Construction of a new wood room is to be started immediately by the Rhinelander Paper Company, Rhinelander, Wis., according to announcement of E. O. Brown, president. Fireproof construction of concrete, brick and steel will be used.

Because the present wood room was too small and its equipment inadequate, the company decided to raze it and build another fronting on the Wisconsin River. New cookers will be installed, permitting of a larger capacity and more efficient pulp production. The contract has been awarded to C. R. Meyer & Sons Company, of Oshkosh, Wis. It is expected that the building will be enclosed before cold weather sets in so the interior work can be completed in the late fall.

A new wood room is also being built by the Thilmany Pulp and Paper Company, in connection with its main mill at Kaukauna, Wis. The unit will be 50 by 60 feet in size and of brick construction. Considerable remodeling will also be carried on at the same time so as to make the wood room entirely modern and efficient. Excavation has been started and work will be rushed through.

Within about thirty days the Menasha Paper Corporation will be able to start operations in the mill formerly owned by the Menasha Paper Mills Company, according to announcement of W. H. Nelson, president. It will take about that long to complete the remodeling and the addition of a new power plant. The company will then start making straw board on the two machines. Large quantities of straw are already being trucked in from the nearby farming company. The corporation was organized recently to take over the defunct mill and place it back in operation.

Pulpwood Raft Beached

Loss of a raft containing 17,000 cords of pulpwood valued at $175,000 was the prospect faced by the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., according to week end news reports. The raft was being towed across Lake Superior by the tug Butterfield, of the paper company's shipping subsidiary, the Newaygo Tug Lines, Inc., and was beached on Stockton Island when a gale arose so severe that it became out of control.

It was the company's intention to discontinue rafting for the season after this shipment was landed, because of the approach of unfavorable weather. The raft was made larger than any others ever floated across the lake. Two Canadian tugs, the Puckasaw and the Whalen, were engaged to assist in the trip, but the three working doggedly in the storm were unable to head the raft into the wind.

Most of the wood may be saved if an off shore gale does not arise to carry the raft into the open lake. Part of it had piled up on the island, however, making the floating of the raft difficult. The tug Butterfield has successfully towed five rafts across Lake Superior this season to Ashland, Wis., the car loading point, each averaging 12,000 cords. Last year a 12,000 cord raft was lost in the lake.

Paper Chemistry Institute Officers Re-elected

All officers of the Institute of Paper Chemistry at Lawrence College, Appleton, Wis., have been re-elected. They are: Ernest Mahler, vice president of the Kimberly-Clark Corporation, president; D. Clark Everest, vice president of the Marathon Paper Mills Company, vice president; Dr. Henry Merritt Wriston, president of Lawrence College, secretary; Westbrook Steele, executive secretary; Ralph J. Watts, treasurer.

Seventeen college graduates representing fifteen different institutions are enrolled in the institute at the present time. They have come from 12 different states to specialize in the study of paper chemistry. Some of them are already connected with paper mills.

Thus far one fellowship and fourteen scholarships have been awarded by the trustees of the institute. The fellowship was voted to E. L. Foreman, Nashville, Tenn., a graduate of the University of Illinois. Scholarships were voted to the following, whose colleges are named: E. D. Amstutz, Wooster, Ohio, Massachusetts Institute of Technology, now with American Writing Paper Company; K. L. Buff, Union, Ill., Elmhurst College; W. L. Cassidy, Mason City, Iowa, University of Iowa; R. C. Crain, Frankfort, Ind., College of Wooster; R. L. Davis, Cumberland Mills, Me., Bates College; P. F. Gross, Huntington Park, Cal., University of Southern California; H. J. Irwin, Melcher, Ia., Simpson College; E. S. Laughlin, Delaware, Ohio, of Ohio Wesleyan University; L. P. Leech, Wooster, Ohio, College of Wooster; M. D. Reuben, York Haven, Pa., Carnegie Institute of Technology; Carl Schroeder, Portland, Ind., Depauw University; E. H. Voightman, Sheboygan, Wis., University of Wisconsin, and V. B. Waterman, Hermiston, Ore., Whitman College, Washington.

Among those donating to the scholarship funds are: Pennsylvania Salt Company, Philadelphia; Paper Makers Chemical Company., Lockport, N. Y.; Edgar Brothers Supply Company, New Jersey, and Masonite Company, Laurel, Wis.

Work on Eau Claire Dam Progresses

All protruding obstructions are being removed from the dam in the Eau Claire River from which the Dells Paper and Pulp Company, Eau Claire, Wis. receives its power. The level of the storage pond was lowered five feet and everything above the water over the long expanse was removed. An old wooden dam was among the obstructions demolished. This will improve the flowage. The stilling basin built by the Northern States Power Company is also completed and the coffer dams are being removed.

Kimberly-Clark Golf Tournament

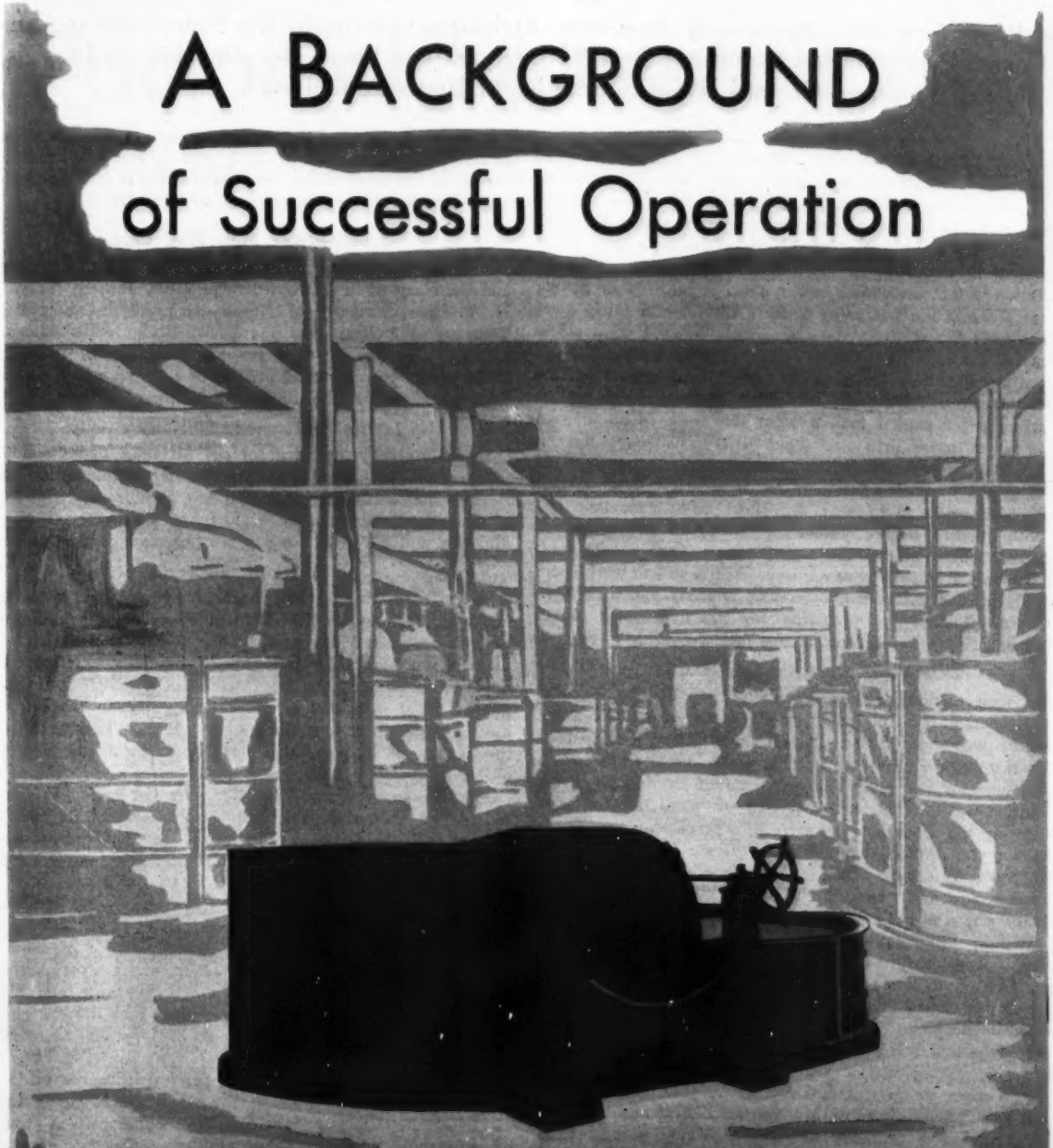
Office employes of the Kimberly-Clark Corporation have completed their third annual golf tournament. Joseph Nodolony won the F. J. Sensenbrenner Cup, M. D. Behnke, the Ernest Mahler Cup, Fred Seaborne, the Harry Price Cup, and Edward Broecker, the S. F. Shattuck Cup. A dinner was held at the mill cafeteria at which the cups were presented following speeches made by F. J. Sensenbrenner, president; S. F. Shattuck, vice president; and Fred VanLiew, mill manager. Eighty men took part in the tournament. The office men are now organizing bowling leagues for the winter.

United Wall Paper Outing

[FROM OUR REGULAR CORRESPONDENT]

HUDSON FALLS, N. Y., September 13, 1930.—An outing was held this week by office employees of the United Wall Paper Company to Lake George where they were entertained by W. A. Huppuch, president of the firm, at his summer home. Following a boat excursion on the lake the delegation were taken to the Lake George Club where dinner was served. All enjoyed a good time.

A BACKGROUND of Successful Operation



Dilts

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made In Your Beaters"

Demand For Paper Fairly Active In Chicago

Fine Paper Merchants Apparently Assured of Stabilized Conditions For Some Time to Come—Coarse Paper Market Continues Dull With Quotations Easy—Tissues Moving In Fair Volume—Ground Wood Specialties In Moderate Request

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 15, 1930—Though not as good as anticipated, fall business is slowly getting under way with prospects for the future at least much brighter than in recent months. Chicago is to be the center of much activity within the next month and the coming meeting of the National Paper Trade Association in the week of October 6 is the signal for much preparation in that association and in allied organizations. Strong sales pressure in the fine paper lines is resulting in fairly good business with the mechants now seemingly assured of a stable market for some time to come. The news print market has not reported any definite contract prices for the coming year but the reports indicate that the prices will either be the same or higher. The waste paper market took a boost this week in an indirect fashion when more than one hundred representatives met in Chicago to perfect a working organization with the purpose of stabilizing and perfecting the industry. The coarse paper market is dull, with prices at or near their lows made some time ago but, with jobbers urging purchases, there are indications of improvement here before the fall is much further advanced. Ground woods are fair. The board market has still to work itself out of its price situation but, otherwise, is fairly optimistic over the future. Tissues are preparing for the mid-winter season and accumulating a fair demand at this time, according to reports.

New Paper Stock Group Formed

More than one hundred representatives of the waste paper industry, coming from all parts of the country, attended a big meeting at the Palmer House, Chicago, on Wednesday, September 10, for the purpose of organizing the waste paper trade into a working unit for the general improvement of the industry. An organization was effected, officers elected and plans laid for more meetings in the immediate future. No permanent name was chosen for the organization although "Waste Paper Institute," "Paper Stock Institute" and other names were suggested and will receive attention. Newell Lewis of Pittsburgh was elected temporary chairman; David Charak, St. Louis, vice-president; John Winter, Cleveland, secretary and Samuel Cohn, Omaha, treasurer. Temporary executive officers elected were Samuel Levine, Detroit, and Maurice Pushker, president of the Cook County Paper Stock Company, Chicago. The meeting was addressed by Benjamin Schwartz, director general of the Institute of Scrap Iron and Steel. Mr. Schwartz, a capable organizer, is to be the consulting advisor for the new organization and the new waste paper group will undoubtedly be patterned after the splendid working principles of Mr. Schwartz' organization. The new organization is distinctly not a price fixing group. It is being formed, according to Mr. Pushker, with the principles of education, stabilization, ethics, equalization and sound business procedure as the dominant notes.

"We will endeavor to use education," declared Mr. Pushker, "to try to eliminate various evils that now exist in this business. There are billions of dollars worth of investment in this field that should rightfully be recognized. We want to work with the mills to prevent a widely fluctuating market. We want to stabilize our industry that we may make a fair profit. We want to get a firmer and broader and more understanding contact with both consumers and accumulators, and, while we are making these outside contacts that will benefit everyone, we want to re-arrange the condition within our own market—to create a standard of ethics—to promote the waste paper industry to its rightful place."

A second meeting of the new association, at which a name will probably be adopted and working plan arranged, is expected for the near future at which time arrangements will be made for a much larger gathering sometime early in October.

Brown-Bridge Mills Staff Changes

H. S. Brown has resigned his position as Chicago representative and secretary of the Brown-Bridge Mills, Inc., of Troy, Ohio. H. T. Blair, formerly of Nashua Gummed and Coated Paper Company is looking after the Brown-Bridge Mills' interests in Chicago. Volume of sales for the company are running well ahead of the corresponding period for 1929, with important order bookings ahead for the balance of 1930.

Interesting Event in McNulty Family

W. P. McNulty, president of the McNulty Paper and Twine Corporation, paper and twine merchants, of 535 West Chicago Avenue, announces the birth of a son, Wednesday, September 3, another prospective paper and twine merchant. Both Mrs. McNulty and the new-born son are progressing very nicely.

News of the Trade

"Rags," the unusual and interesting four page sheet mailed out at intervals by the Rag Content Paper Manufacturers, makes its 24th appearance this week. This "reminder of the importance of good paper from the standpoint of durability, good advertising, impressiveness and good taste" contains a sample letterhead of modern good taste and a clever little story on the third page headed "Travels with a Price List." It is a striking lesson on the fallacy of buying cheap merchandise with the expectation of really saving money.

The Hoberg Paper and Fibre Company, Green Bay, Wis., manufacturer of pulp and paper products, has placed its advertising account with the Dunham, Younggreen, Lesan Company, Chicago advertising agency, and is making plans for continued development of its trade.

The simplicity of the Empire Paper Company mailings to advertise their bond paper is perhaps its most attractive feature. A plain white envelope contains only the sample of Bond with size, weight, color and finish and lot number together with price in reams and colors. Envelope to match (only one in each mailing) are included. The one envelope and the one sheet of plain bond makes it possible for the busy executive to quickly determine the merits of the sheet.

Of interest to the trade is the news that boards made from corn stalks are being used in the construction of the Century of Progress (Chicago Worlds Fair) buildings. A trainload of corn stalks purchased from corn-belt farms was used in the manufacture of the roof insulation which has been ordered for the Administration and Travel Transport buildings.

French Paper Industry To Standardize

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 17, 1930.—The French Standardization Association has recently taken up the question of simplifications and standardizations in the paper industry, according to a report from Assistant Trade Commissioner E. C. Taylor at Paris.

The association at a recent meeting studied the question of base sizes for adoption in France and also made preparations for a future study of paper specifications including weight, colors, conditions of delivery, etc.

A New Meaning of "Factor of Safety"

FACTOR OF SAFETY. It is always taken into account in the building of strength into a machine.

Seybold builds into its cutters an additional Factor of Safety, just as important as that affecting the srength of the machine,—*Factor of Safety for the Operator.*

For 49 years, Seybold Cutters have answered the problem of speed, accuracy and durability. The various members of the Seybold family are as different as the needs of paper cutting.

Let your new cutter problem be answered by the question, not "What cutter shall I buy?" but "What size and style of Seybold will best serve my purpose?" A Seybold representative will gladly assist you—his knowledge will prove helpful.

Harris-Seybold-Potter Co.

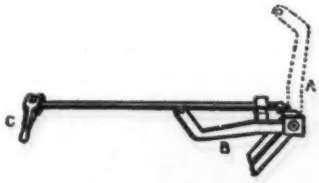
SEYBOLD MACHINE CO. DIVISION

Dayton, Ohio

Eastern Sales Agents: E. P. LAWSON COMPANY, INC., 424-438 W. 33rd St., New York, N. Y.
Southern Sales Agents: J. H. SCHROETER & BROTHER, Atlanta Georgia
Western Sales Agents: CHAS. N. STEVENS CO., 112 W. Harrison Street, Chicago, Illinois

The Seybold Automatic Cutter embodies every desirable feature of safe, accurate, rapid, easy, and economical cutting of paper. Made in 32, 34, 38, 40, 44, 50, 56, 64, 74, 84, and 94 inch sizes. Illustration shows 44 inch size.

This safety washer, between the drive shaft and operating parts of the machine will separate the knife from the driving power when overloaded. Easily replaced.



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HARRIS SEYBOLD POTTER

FLATBED LETTERPRESSES
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METAL DECORATING PRESSES
PAPER CUTTERS
BOOKBINDING EQUIPMENT

Boston Paper Market Shows Improvement

Some Dealers Report Business As Very Good and Since Labor Day Better Than for Some Time —Reduction in a Number of Grades of Box Boards Causes Some Disturbance—Paper Stock Market Conditions Unchanged — New England Paper Men Meet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 14, 1930—More buying and more inquiry has developed in the Boston paper market. Some of the dealers say business is very good and since Labor Day better than for some time. One of the leading merchants says: "Conditions in the paper and allied industries seem more promising. Members of the trade generally report that occasionally they have a day more like normal times than for a considerable period. While such days are not very frequent there are enough of them to give confidence that they will become increasingly frequent from now on and before the end of the year occur often enough to inspire the hope that business is on the way to normal. If anyone has the idea that deferred buying will bring lower prices, opinion is unanimous that any purchaser who plays the market any further this way will, to use the language of the stock market, 'get caught short.'" Fine paper dealers find a much more satisfactory demand than in August, which was generally a quiet month, as usual. For wrapping paper there is a better demand from retail stores, but as yet the demand from manufacturing concerns, for instance, those making chairs, or at least some of them, is rather dull. On the whole, however, there is a fairly good seasonal increase in the call for kraft.

There is a slight improvement in the demand for specialties, such as drinking cups, etc.

Reduction on Box Board Disturbing

The reduction in a number of grades of box board is disturbing to the trade, although it is felt that the volume of business will not be affected. Filled news is now quotable at a flat $32.50, down from a range of $37.50 to $40.00. Chip board is now at $30.00, compared with $35.00 to $37.50, although special chip board is being bought at $32.50. Single manila lined chip is quotable at $45.00, but single white, patent coated newsboard bender is unchanged. Some of the box makers don't want a decline in the market, because they are obliged to make adjustments in the price of boxes "all along the line." It is said to be useless to try to get higher prices for grades that have been reduced, but no one wants to sell for less.

Paper Stock Market Continues Unchanged

The situation in paper stock is practically the same, with the prices unchanged in nearly every case. It is still quiet and a buyers' market. Mixed paper are accumulating and mills are buying small quantities at their own figures. A slight advance has been made in the price of foreign gunny bagging No. 1, now quotable at 1.65, f. o. b. Boston, compared with a former quotation of 1.50.

New England Paper Merchants Meet

The first fall meeting of the New England Paper Merchants Association was held at the Harvard Club Thursday evening, with President Arthur E. Ham in the chair. The number present was above the general average attendance at the meetings of the association. George A. Just, managing director of the Boston Typothetae, the speaker of the evening, discussed the aims and objects of that organization, mentioning matters in which the allied industries in the Graphic Arts Group could cooperate. One of the strong points brought out in his talk and later in the discussions was that at no time in the history of business could those two well known old sayings, "United We Stand; Divided We Fall" and "In Union There is Strength," be so appropriately applied to business as at the present time. In the business session it was decided to close offices Wednesday afternoon, September 17 on account of the Boston Tercentenary Celebration. Every officer of the local association was present and also Arthur W. Blackman, vice president of the National Association.

G. E. Williamson, of the Strathmore Paper Company, Mittineague, Mass., and Raymond Stevens, of Arthur D. Little, Inc., Cambridge, Mass., are among the fifteen New England industrialists to go on the national research council tour of representative research laboratories, leaving New York October 7.

The Tribble Rope & Mop Company, Malden, Mass., has been incorporated to manufacture cordage, twine, etc. There are 1000 common shares without par value. President, A. Roy Tribble; treasurer, Joseph L. Tribble, 99 Pleasant street, Malden, and Francis S. Tribble.

Maurice Park, of the Holyoke Card and Paper Company, Holyoke, Mass., was at the office of John Carter & Co., Inc., for a sales demonstration of one of his company's new lines, Tint-Cote, Saturday morning, John Carter & Co., Inc., is handling this line.

E. M. Davenport, treasurer of Spaulding & Tewksbury Company, box board dealers, has returned from Southwest Harbor, Me., where he has been passing the summer with Mrs. Davenport.

P. B. Von Olker, president of Von Olker & Snell, who has been ill of arthritis for a number of months at a hospital, is at his home at Brookline, but unable to return to his office as yet.

The Paper Stock Sales Corporation, Boston, representative of corporations, firms, etc., has been incorporated, with a capitalization of $50,000. There are 1,000 shares, $50 each. President, Robert F. Graham; treasurer, William H. Brown, 83 Damrell street, South Boston, and J. Arnold Farrer.

Transmission Line Placed in Operation

The second 230-mile transmission line from the Paugan, Quebec, hydro-electric plant of the Gatineau Power Company, a subsidiary of the International Hydro-Electric System, to Toronto, has been placed in commercial service. The new line is a 220,000-volt steel tower aluminum line, a duplicate of the first one, and is being used in conjunction with it for the delivery of power under contract to the Hydro-Electric Power Commission of Ontario.

The two lines are about one hundred feet apart and have the distinction of being the highest voltage transmission lines in operation in Canada. Over these lines Gatineau Power Company is at present delivering to the Commission 150,000 horsepower of electric energy which is being distributed in the Toronto area to supplement the power suppled from Niagara Falls.

The route which the two lines follow was surveyed by aerial photography, resulting in lower cost and the saving of much valuable time. The path of the lines was first tentatively located on the best maps available, and major obstacles, large lakes, etc., were avoided. Then an airplane flew over the proposed route first from west to east, and then in the reverse direction, taking oblique overlapping photographs along the entire distance.

These aerial photographs provided a true map of a strip of country about five miles wide and the tentative course was checked against it. From this study, the final route was selected and then flown over, the airplane this time taking vertical photographs. These pictures were made into a kind of mosaic map on which all the work heretofore performed by field survey parties was done by a draftsman in his office.

Waldron Paper Rolls Are *Economical* To Use

Waldron High Speed Heavy Duty Embosser—Closed Front Type

The roll that gives the greatest number of service hours is obviously the most economical roll to buy and use. Utilization cost is the only measure by which roll costs can be judged or compared.

The unusually long life of Waldron Rolls is due to the Waldron methods of constructing and conditioning. Quality of paper, extent of compression hardness, proper moisture content, exactly proportioned shafts and heads—all are reasons why Waldron Rolls stand up in service.

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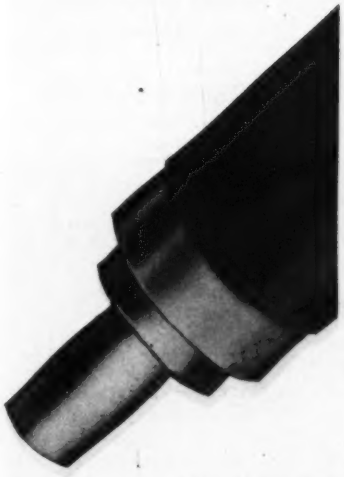
Many prominent converting plants insure the utmost in embossing efficiency and economy by using Waldron Embossing Machines and Waldron Rolls.

Waldron "Centennial" Embosser—latest open front type



Write for a copy of "How A Paper Roll Should Be Run In." A helpful instruction sheet sent without obligation.

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WALDRON

Paper Converting Machinery

Ontario Paper Mills Running Near Capacity

Prevailing Good Demand Keeps Book Paper Plants Particularly Active — Manufacturers of Writing, Bond and Ledger Papers Practically Caught Up With Machines—Fairly Steady Request Experienced For Various Grades of Coated Papers

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, September 15, 1930.—There has been a distinct change for the better in wholesale paper circles in Ontario and the trade now believes that the corner has been turned. While small lot buying is still the order there is a disposition on the part of the consumer to buy paper and paper products more freely and the business that is going is not of the hand to mouth variety it was a few weeks back. Of course, August was a quiet month, as it always is, and September opened with a light volume of sales. With the termination of the two weeks of the Canadian National Exhibition and the near close of the holiday season a turn came in the affairs of the paper merchant and the market now gives every promise of a quick return to normal. Sales are not nearly as hard to make now and with a better tone to business generally throughout the province, it is believed that volume selling is now just around the corner. Demand for fine papers is beginning to loosen up as business houses begin to get busier and there is a slightly better tone to the coarse paper market.

In the paper manufacturing arena there has been, within the past couple of weeks, an increasing degree of activity, and while few of the mills have large orders ahead they have enough to keep them running fairly close to capacity. This is particularly noticeable in the case of the book paper mills. There is a good demand for book paper and some of the mills report some nice business booked for some weeks ahead. Mills generally manufacturing that product are among the busiest of the paper group. Manufacturers of writings, bonds and ledgers are pretty well caught up to their machines and while the outlook for business this fall is good the mills can not be said to be operating at capacity. For one thing the bindery end of the printing business is very quiet, reflecting the fact that business in catalogs, pamphlets, and other direct mail advertising lines is quiet. On the other hand, the publishing trade is using a fair amount of paper and certain sections of the printing trade are operating at full capacity. The printing business generally is in fair shape and some sections of it are making some very good requisitions for paper.

Manufacturers of coated paper report very little business ahead but a fairly steady demand for the product. The coated paper business has been running on a pretty even keel all season with the mills operating on a basis that called for not more than a week or so of orders ahead. But these orders never failed to come in and although the manufacturers would have been easier in their minds if they could have secured greater tonnage ahead they are pretty well satisfied to have come out of the general business depression as well as they have. In light weight papers the market continues strong and manufacturers do not appear to have been affected to the same extent as that sustained by other paper lines. Tissues and toilets, with accompanying specialty lines have sold well all summer and the business done by the mills so far this year is equal to last year's volume. There is still a considerable volume of light weight paper imports into Canada, together with a certain amount of waxed paper, and the trade has suffered to some extent as a consequence. United States paper firms have been shipping in considerable stuff as the result of bad business conditions over there, largely, and in some cases have undersold the Canadian manufacturers. Despite this fact, however, the Canadian light weight paper mills have done a really good business this year and are well satisfied with the accruing results. Glassine and greaseproof papers are still moving slowly and the market for these lines is rather weak.

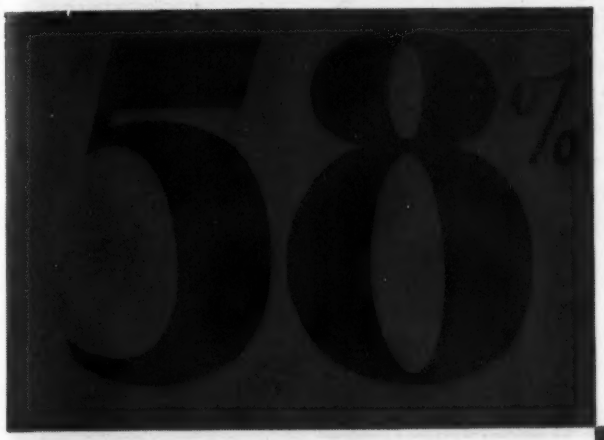
Paper board mills are slightly busier than they have been so far this summer and it begins to look as if the bugbear of overproduction is gradually being eliminated as a factor in the board market. While the industry is in none too satisfactory a condition, there are signs of improvement and manufacturers are confident that before long the board market will again be back on its feet. Some slight improvement in the paper box manufacturing line has taken place of late and box makers are anticipating an early return to normal conditions following a correction of general business conditions throughout the province. Paper converting firms are still operating lightly, although manufacturing stationers say they have some nice business booked for future delivery. Envelope firms are only moderately busy and there is a strong tone to the rag and paper stock market, there being quite a fair demand, particularly for paper stock, by the paper mills.

Abitibi To Install Swedish Turbine

During a short stay in Toronto recently George Willcock, assistant sales manager of Nydquist & Holm, of Trollhattan, Sweden, booked an order from the Abitibi Power and Paper Company, Ltd., for a 2,000 h.p. hydraulic turbine, to be used for replacement at the Iroquois Falls mill, and appointed two Canadian firms agents for the sale of Nydquist & Holm engines and turbines in Canada. They are the Holden Company, Ltd., Montreal, for hydraulic turbines, and Swedish General Electric Company, Ltd., Toronto, for Diesel engines. The Nydquist & Holm Company is a large and old Swedish concern employing 1,500 hands.

News Print Market Should Improve Soon

It is possible that shipments of news print from now on may show some improvement. The past three months have had a seasonal influence on consumption which has made for further declines in shipments already made lower through general business conditions. From a seasonal point of view consumption should soon be on the upswing, although to what extent it will be hampered by business conditions remains to be seen. Any improvement that can be shown in the next few months can hardly have an appreciable effect on the situation surrounding the news print industry as a whole. It is pointed out that there must be a very marked increase in shipments or a definite revision of prices before the manufacture of news print becomes a really profitable business for some companies. Nevertheless, any reversion from the moderate decline in production which has been apparent recently will be encouraging. Investors have been accustomed to witness steady monthly increases in production for so many years that a decrease is viewed with dismay. Actually the falling off has been relatively small and the industry is probably better off, as far as the effects of the business decline are concerned, than most other lines of manufacture. A leading news print authority points out that it is the position of the industry itself which has been thrown into clear relief in the light of lower production. The news print industry was overexpanded long before the present business decline became apparent; not until lower demand loomed as a potential menace was the position of many companies made painfully obvious. Added to this, the new tonnage which will be made available toward the end of the year detracts from the benefits that might accrue from a possible improvement in consumption. It will take more than a return to normal conditions, it is contended, to bring the news print industry on to a sure footing. It will



ALKALI

58 per cent is more than mere figures when applied to Diamond Soda Ash —it describes a quality that is undeviating—a Soda Ash guaranteed to test over 58 per cent Sodium Oxide by actual analysis.

SODA ASH

In order to safeguard the quality of their raw materials, consumers of Caustic Soda are urged to specify "Diamond" 76 per cent *Actual Test* Caustic Soda, a full strength alkali that will analyze over 76.50 per cent Sodium Oxide.

CAUSTIC SODA

Diamond Alkali Company

Pittsburgh, Pa., *and Everywhere*

take more than an increase over 1929 production to enable some mills to operate on a profitable basis. For, as the market for news print improves there will be new tonnage available in plenty. Two new 125-ton machines are being installed at Dalhousie, another two similar units are waiting to come into production at the James McLaren plant at Buckingham. As fast as demands increase Canadian mills will be able to anticipate that demand for some years. If the laws of supply and demand continues to function there appears to be little chance of a betterment in news print prices. With this prospect Canadian mills have been doing the only thing possible—working for an improvement within the mills themselves. Working costs have become the centre of attention in mill accounting and it is believed that substantial progress has been made in this direction.

Paper Makers' Annual Picnic

More than 1,500 persons attended the annual picnic of the Sturgeon Falls Division of the Abitibi Power and Paper Company, Ltd., at Bayview Beach, about four miles from the Falls and an ideal spot for the gathering. The Sturgeon Falls mill has the distinction of having run 127 days from April 5 last without a single accident. In other words, it had run 240,178 man-hours free from accident. This means that if one man had worked those hours he would have been a centenarian. For the purpose of the picnic it was assumed that one man had worked those hours and he was introduced to the gathering as the "Safety Man"—a figure of venerable and appropriately cautious appearance. Included among the speech-makers were Dr. J. R. Huritbise, of Sudbury, M. P.-elect for the House of Commons, and A. Z. Aubin, M. P.-P. for the district, and A. A. Aubin, Mayor of Sturgeon Falls. D. B. Chant, manager of the Sturgeon Falls mill, also spoke, and among those present were: Alexander Dewer, editor of "Abitibi," and director of safety for the company; Alf Gaudette, and James Nolan, chief paper inspector at the Sault Ste. Marie division. J. C. Mooney, business manager of the *Chicago Herald-Examiner*, and his wife, were among the guests.

Grinding Company To Build New Addition

Robert C. Douglas, manager of the Norton Company, of Canada, Ltd., grinding wheel manufacturers, in Hamilton, Ont., announced a few days ago that his company had already broken ground for an addition to the present plant. The addition, it was stated, was necessary, due to the sale and production of Norton abrasive pulp stone in demand by manufacturers of ground wood pulp. The pulp stones are composed of a set of segments mounted on a center and are made in sizes from 54 by 27 inches to 67 by 54 inches. They have been in used by the mills of Canada for many years. The Norton Company at Chippawa previously handled part of the work of the pulp stones, but it was found advisable to concentrate both the manufacture of the segments and the assembly as well at Hamilton, from which office the product is sold. The activities of the Norton Company along the border will now be concentrated at Hamilton.

Notes and Jottings of the Trade

Work has been started on repairs to the plant of Buscombe & Dodds, Ltd., rag and paper stock dealers, Toronto, whose premises were damaged by fire to the extent of about $5,000.

Australian oranges now on sale in Vancouver stores, are being wrapped in British Columbia paper. The printed wrappers of a recent shipment are the product of a Vancouver firm, Pacific Mills, Ltd. Encouragement of trade between British Columbia and the Antipodes is advocated by H. C. Pim, export manager of the concern, whose business with these countries represents about 25 per cent of their export business.

Dominion Boxboards, Ltd., Duchess street, Toronto, and mill on the water front, recently broke Canadian records three days in succession. The mill finally reached a production of 123 tons in 24 hours and the average for the three days run was 114 tons. The Dominion Boxboards, Ltd., is owned and operated by the Dominion Envelope and Cartons, Ltd., who also control the Dominion Envelope and Cartons, (Western) Ltd., with factories at Winnipeg and Edmonton.

Many friends in the paper trade are sympathizing with A. R. Sargent, of Edmindston, N. B., purchasing agent for the Fraser Companies, Ltd., whose wife recently died as the result of a motor accident near Three Rivers, Que.

George Wilson, of Clark Bros. & Co., Ltd., wholesale paper dealers, Winnipeg, Man., was a recent business visitor in Toronto.

A. E. H. Fair, general superintendent of the Alliance Paper Mills, Ltd., has returned to Merritton after a holiday trip in Northern Ontario.

A new plant has been constructed at St. Boniface, Man., by Dominion Tar and Chemical Company, Ltd. It is a one-story structure, 53 by 250 feet and is equipped with the latest machinery for manufacturing tarred papers and saturated sheeting, as well as for rewinding dried felts and sheeting. The plant is served by direct track connection. C. G. Jones is the manager and the Alexander-Murray Company, Ltd., Toronto, Montreal, and Winnipeg, will act as selling agents. The plant cost approximately $35,000.

George J. Manson, treasurer of Mansons Ltd., Hawkesbury, Ont., has purchased from the Keyes Fabric Company, Waterville, Maine, rights, trade mark and goodwill of its lines of pressed pulp goods for the British Empire. Mr. Manson will buy or build a factory and equip it for the manufacture of the lines of goods made by Keyes & Co., who are large manufacturers of pressed pulp articles, such as pie plates, food trays and the "Savaday" line of household articles. Its products have been extensively used in Canada and have been imported from Maine.

The Strathcona Paper Company, Ltd., of Strathcona, Ont., near Napanee, has just put into operation a two-cylinder board machine with from 12 to 14 tons of light weight board per day. The company has also completed the construction of new general offices in the factory building. George R. Finlay is secretary-treasurer of the company in charge of sales, with office on Bay street, Toronto, and the company's product is also handled by W. P. Bennett & Son, Front street, Toronto.

Robert Clark, of the Kimberly-Clark Company, Neenah, Wis., was a business visitor in Toronto, a few days ago.

The Canadian Paperboard Company has moved its egg filler plant from Frankford to Toronto, where it has been incorporated with the company's large factory on the water front.

John W. Hewitt, president of Paper Sales, Ltd., King street, Toronto, has returned from a business trip to Quebec.

James Logie, Ontario representative of the Canadian Paperboard Company, has moved his office from Front street to Bay street near King, where the head offices of the company are now located.

Provincial Paper, Ltd., has mailed out from its general offices in Toronto, an artistic folder containing samples of their various lines of book papers. The stock used for the cover is Ajax Embossing Buff and the printer has used four colors in the production.

The Westminster Paper Company, Ltd., New Westminster, B. C., has found it necessary to operate on a 24-hour basis, employing 100 hands, owing to receipt of heavy orders from both old and new customers. Officials report that the firm is likely to be kept busy on this basis for several months to come. The demand for paper wrappers of various designs, shapes and colors has become urgent from the Okanagan Valley during the past few weeks.

Mayor E. S. Noble, of Kapuskasing, Ont., who is the manager of the Spruce Falls Pulp and Paper Company's plant, and Mrs. Noble, have gone on a holiday trip to the Pacific Coast.

Eastern Paper Box Company, St. Pierre, Grantham Township, Que., has been granted a Dominion charter. The authorized capital is $20,000.

S. F. Duncan, president of Provincial Paper, Ltd., Toronto, is spending his week ends at Windermere, Muskoka.

The VOITH INLET will give you—

288 installations now in operation in 142 mills throughout the United States and Canada.

better formation

at

lower cost per ton

WITH the Voith Inlet you can improve quality by getting better formation—and at the same time lower costs per ton.

The orifice in front of distributing roll can be accurately controlled by *one* man. Wires last longer. Weight of sheet is uniform. Heavy stocks can be run at slow speeds.

All these advantages—and others—combine to give you the most satisfactory and profitable slice equipment for your machines. The wider market which higher quality creates for the sale of your paper is also a source of increased profits.

Inlet efficiency is important. Because it is the biggest factor in governing capacity and controlling quality. And both have a vital bearing on profits.

A thorough investigation of what the Voith Inlet can do for you may reveal some startling facts. The Valley Iron Works, Co., Appleton, Wisconsin will be glad to send any information you desire.

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Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Rhinelander, Wis.—The Rhinelander Paper Company has approved plans for a new addition to mill for increased production facilities, and has awarded a general contract to the C. R. Meyers & Son Company, 50 State street, Oshkosh, Wis., for the structure. Work will be placed under way at once. Estimated cost has not been announced.

Hoquiam, Wash.—A group of Portland, Ore., interests, headed by B. T. McBain, Portland, has negotiations under way with the city officials at Hoquiam for a suitable site for a pulp mill, including available water supply. It is proposed to build a plant to cost over $1,000,000, it is said, if satisfactory arrangements can be made. It is estimated that about 10,000,000 gallons of water daily will be required. It is understood that a company will be formed to carry out the project. Those interested include A. B. Galloway and E. E. Hortola, both of Portland.

Biltmore, N. C.—Raylaine, Inc., Asheville, N. C., recently organized by G. Jean Nord, Asheville, and associates, with a capital of $1,000,000, has closed negotiations for a site on the Sweeten Creek Road, Biltmore, for a new plant for the manufacture of synthetic fibre products under a special process perfected by Mr. Nord. Work will begin at an early date on the initial units, consisting of a main one-story structure, 150 x 400 feet, with one-story warehouse adjoining, totaling about 20,000 square feet of floor space, power substation, machine shop and miscellaneous mechanical units. The entire project will represent an investment of over $400,000. A list of machinery has been arranged, the equipment to be electric-operated. Power will be furnished by the Carolina Power & Light Company. It is proposed to have the plant ready for service early in the coming year. Mr. Nord will be president and general manager of the new organization. D. Ralph Millard, president of the D. Ralph Millard Corporation, and vice-president of the S. A. Lynch Enterprises, Inc., both of Asheville, will be treasurer of the company. Lawrence S. Holt, Jr., Asheville, will be chairman of the board of directors.

Gardiner, Me.—The Hollingsworth & Whitney Company is said to have plans maturing for proposed extensions and improvements in steam power plant, including installation of additional equipment. The work is estimated to cost about $40,000, with machinery.

Brooklyn, N. Y.—The Kashner Novelty Corporation, care of Max Kashner, 447 South Second avenue, Mount Vernon, N. Y., recently organized by Mr. Kashner and associates under state laws, is said to be planning the early operation of a new plant at Brooklyn or vicinity for the manufacture of paper novelties of various kinds. Joseph Goldberg, 2116 Avenue L, Brooklyn, N. Y., is interested in the new organization.

St. Paul, Minn.—The Minnesota Mining and Manufacturing Company, manufacturer of abrasive paper products, sand paper, etc., is said to have plans maturing for a proposed expansion program at its local mill, to provide for the employment of additional operatives and considerable increase in present capacity. The construction work will provide for the consolidation of the works of the Baeder Adamson Company at the St. Paul plant, the last noted organization, heretofore operating a plant at Allegheny avenue and Richmond street, Philadelphia, Pa., being purchased by the Minnesota Mining Company a few weeks ago, as previously reported in these columns. This plant is to be removed to St. Paul at an early date. The acquisition, including good will, is said to represent an investment of about $2,000,000. W. L. McKnight is president of the purchasing company.

Canton, N. C.—The Champion Fibre Company, Canton, affiliated with the Champion Coated Paper Company, Hamilton, Ohio, is reported to be planning an expansion and betterment program at its local mill, including the modernizing of certain present machinery and the installation of additional equipment for increased output. The work is reported to cost over $150,000.

Buffalo, N. Y.—The George Irish Paper Company, 25 River Street, has leased a portion of its warehouse at address noted to the Acme White Lead & Color Works, which will occupy at an early date.

Quincy, Mass.—The waste paper warehouse of B. J. Nieberg, Jackson street, was damaged by fire, September 10, with loss of about $15,000. It is understood that the structure will be rebuilt.

New Hope, Pa.—The Union Mills Paper Manufacturing Company is running on close to normal production schedule giving employment to regular working force, and is expected to hold to this basis for an indefinite period.

Chester, Pa.—The boiler plant of the Scott Paper Company, Front and Market streets, was damaged by the explosion of a boiler tube in one of the boiler units on September 9. The amount of loss has not been officially announced. The damage will be replaced at once.

Baltimore, Md.—The Maryland Paperboard Company is being organized by local interests with a capital of $100,000, to manufacture and deal in paperboard, fibre board and kindred products. It is understood that the company will arrange for the operation of a mill in this vicinity at an early date. The names of the officials have not yet been announced.

Chicago, Ill.—Plans are being perfected for a reorganization of the Celotex Company, 919 North Michigan avenue, manufacturer of wallboard, insulating board, etc. A stockholders' committee has been formed to carry out the financial program, which provides for a new stock issue of 55,300 shares of common stock, totaling about $553,000. The company operates a mill at Marerro, near New Orleans, La., and has recently been carrying out an expansion program for increased capacity. It is understood that the mill is now running on a normal production schedule, with regular working force, and will be continued on that basis until further notice.

Buffalo, N. Y.—The duPont Rayon Company, River Road, has closed down one of its two local plants, and will continue production at one mill only until further notice. While the

M & W electrically-driven Four-Drum Winder and Slitter in mill of Standard Paper Mfg. Co., Richmond, Va.

Roll Hardness as You Like It

CORRECT roll winding requires a graduated tension as the paper goes on the roll. For the outside, slightly less tension is required than for the centre of the roll.

Mill superintendents are well aware of the difficulty of reducing the tension as the rolls get larger. With the older types of drive, the natural tendency is toward harder winding. This tendency must be overcome by adjustments calling for care and skill.

The M & W electrically-driven Four-Drum Winder is a complete remedy for this condition. The specially-wound, individual electric motors adjust themselves *automatically* to increasing weight of the rolls. The paper is wound snugly, but with no excess drum slip to create friction and undue hardness. The human factor is reduced to the minimum.

The new M & W booklet on Four-Drum Winders describes this electric drive fully. Shall we send you a copy?

Yes, we still build belt-driven Winders — and good ones! But we consider the Electric Drive a long step forward.

THE MOORE & WHITE COMPANY

Established 1885

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first noted plant is inactive, the company proposes to carry out a machinery improvement program and will make a number of changes and betterments in existing equipment. It is expected to develop increased efficiency when the plant is again on the active list.

Buckingham, Que.—The James Maclaren Company, Ltd., Buckingham, is projecting plans for a new hydroelectric generating plant on the Lievre River, between Massan and Buckingham, where a site has been selected. The new plant is to be equipped for an ultimate capacity of 120,000 horsepower, and is reported to cost close to $10,000,000, with transmission system. It is understood that the majority of the output will be utilized by the company for paper mill operation. The company is now completing a hydroelectric power station at High Falls on the same river, with a rating of 90,000 horsepower, following construction for a number of months past. At the same time a new newsprint mill with a capacity of 250 tons per day is ready for service, as well as increased facilities for ground pulp wood production. The operation of the news print mill has been deferred for the time being, but it is understood that it will be placed in service in the near future. The company is said to be arranging for additional financing to carry out the new development. Alexander Maclaren is vice-president.

New Companies, Etc.

New York, N. Y.—Newspaper Factors, Inc., has been incorporated with a capital of 200 shares of stock, no par value, to manufacture and deal in newsprint and other paper products. D. A. Shirk, 225 Broadway, is one of the incorporators.

Williamsport, Pa.—The United States Sand Paper Company, Williamsport, has arranged for an increase in capital from $50,000 to $400,000, for general expansion.

New York, N. Y.—The Gatti Paper Stock Corporation, 122 East 42nd. street, has filed notice of increase in capital from $200,000 to $1,150,000, a portion of the proceeds to be used for general expansion.

Belleville, N. J.—The Mutual Treated Lumber Corporation has been incorporated under Delaware laws with a capital of $1,000,000 and 20,000 shares of stock, no par value, to manufacture and deal in lumber products, wood pulp, etc. The company is represented by the Registrar and Transfer Company, Delaware Trust Building, Wilmington, Del.

Aldine Paper Co. Adds New Lines

Due to its rapidly expanding business, the Aldine Paper Company has added a number of new lines representing standard mill brand papers from some of the foremost mills in the country.

The company has recently become agent for the Ravenna Text and Cover, a standard mill brand, manufactured by Knowlton Brothers. This mill has just added a new finish to Ravenna Text. It is a two tone ripple finish which is very attractive. There is also a complete Ravenna Text Announcement line for which Aldine Paper Company is an agent.

Argonant Cover, a standard mill brand line manufactured by the Holyoke Card and Paper Company, is another recent addition. This is carried in embossed, and also a new hand made finish.

The company has also added Daybreak Cover, a standard mill brand paper made by the New York-New England Company. There is also a new line of Gold and silver papers—"Aldine Jewel" line—and a new line of Everyday Booklet Envelopes—a Postage Saver style envelope for mailing booklets and catalogs.

In addition to the above lines, the company has added the following men to its sales staff: Herman Kirsch, Joseph Croll, Louis Basson, Alfred Leroy.

Business is exceptionally good with Aldine, and they expect this fall's business to surpass that of any previous corresponding period.

New York Trade Jottings

B. T. McBain, paper mill engineer, of Portland, Oregon, is a New York visitor. He is making his headquarters at the Hotel Dixie.

* * *

The International Paper Company, New York, has declared the regular quarterly dividends of $1.75 on the 7 per cent and $1.50 on the 6 per cent preferred, both payable October 15 to stock of record September 25.

* * *

The International Paper and Power Company, New York, has declared regular quarterly dividends of $1.75 on the 7 per cent and $1.50 on the 6 per cent preferred, both payable October 15 to stock of record September 25.

* * *

Major Oliver M. Porter, secretary of the National Kraft Paper Manufacturers Association, with headquarters in the Chanin Building, New York, was in Washington last week. During his stay he conferred with Secretary of Commerce Lamont; M. M. Flannery, chief of the Trade Practice Division of the Federal Trade Commission, and other government officials, on various problems of the industry.

* * *

Fred Messner, of the Commodity Department of the Brookmire Economic Service, was the guest speaker at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, last Monday, at the Fraternities Club. Mr. Messner discussed prevailing business conditions in a very comprehensive manner and his address was thoroughly enjoyed by all present.

* * *

The first fall meeting of the New York Section of the American Association of Textile Chemists and Colorists will be held on Friday evening, September 26. The usual informal dinner will be served at 6:45 p.m. at the Hotel One Fifth Avenue, New York City. The meeting proper, following the dinner, will be held in Room 758, 29 Washington Place (New York University). The speaker of the evening will be Professor H. H. Sheldon, of New York University, whose subject will be: "A Demonstration of the Colorscope." Dr. Sheldon, who is professor of physics of Washington Square College, and also president of the New York Electrical Society, is a man well known to members of the association for his invention of the "Colorscope," which was first exhibited in the late spring. The demonstration of this photo-electric cell instrument for the matching of colors, should be one of extreme interest to all.

Manchester Board Co. Wins Fight

PETERSBURG, Va., September 15, 1930.—The Manchester Board and Paper Company of Richmond has won its fight for a revaluation of the portion of the old Silk Mills or Fleet Street property, which was taken over by the Seaboard Air Line Railway, following condemnation proceedings to clear the way for construction of the railroad's new bridge across the Appomattox River. Judge E. P. Cox has set aside the findings of a board of commissioners, which fixed $16,000 as the award to the defendant company in return for the property taken over by the railroad. The court now will name a new board to appraise the property involved.

The first board awarded the Manchester Company $12,000 as damages and $4,000 for land taken over by the railroad. Defense counsel filed exceptions to the report, objecting to certain points of evidence and holding that the award was inadequate in view of a fair valuation of the property and damages resulting through rights acquired by the Seaboard. These objections were sustained this week by Judge Cox and the revaluation ordered.

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World's Largest Kraft Machine

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251 inches across the wire! 44 dryer rolls 60 inches in diameter! An eight roll calendar stack with a bottom roll 32 inches in diameter! Four felt dryers 48 inches, and press rolls 34 inches in diameter! These are figures that command respect, when one considers the smooth, perfect functioning of the machine.

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POWER PLANT SECTION

REDUCING POWER COSTS THROUGH UNIT TREATMENT

Conducted by **Reginald Trautschold Consulting Engineer**

Economies Of Using Superheated Steam[1]

Power Costs Cut Drastically

Steam is being generated in at least forty of the paper making industry's representative modern boiler plants constructed within the past three or four years, at an average pressure well in excess of 400 pounds per square inch and with a mean superheat of 170 to 180 degrees Fahrenheit. This decidedly marked trend toward the use of considerably higher steam pressures and temperatures is especially noteworthy as neither of the present record holding high pressure plants of the Philip Carey Manufacturing Company at Lockland, O., or that of the Masonite Corporation at Laurel, Miss., are included among this representative forty. Even without these extreme examples, where in one case steam is generated at 1,800 pounds and in the other at 1,200 pounds per square inch, there is certainly no lack of evidence that the boiler plants of the modern mills, despite the very pronounced requirements of the dual industry for low pressure steam for heating, cooking and drying processes, is of distinctly high pressure order and that the many advantages to be secured through superheating the steam for power requirements are being capitalized to a very considerable extent.

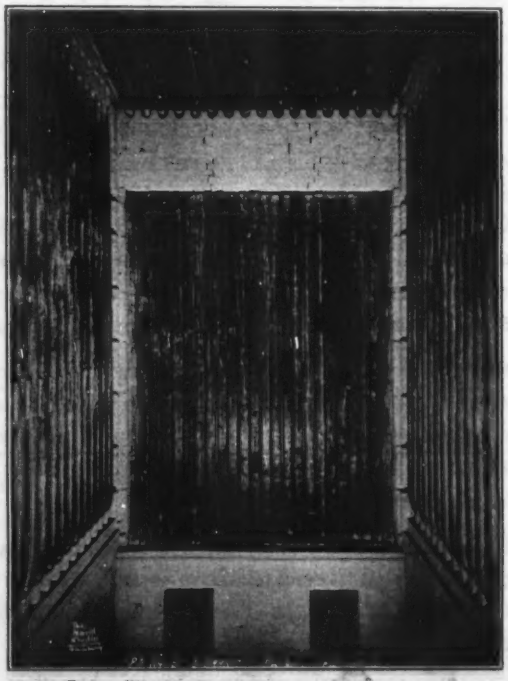
These features effect such economies in the conduct of the boiler plant, in fact, that the power required for the operation of machines and equipment is actually being secured as a by-product to the essential steam supply for thermal processes and at a cost properly appraised by the relatively small expenditure entailed in elevating the steam pressure and adding heat to the steam. The addition of only 217.7 Btu. to saturated steam at 200 pounds pressure converts it into steam at 400 pounds carrying 175 degrees of superheat. That is to say, the addition of slightly more than 18 per cent to the heat contained in saturated steam at 200 pounds pressure doubles the steam pressure and increases the normal temperature of the higher pressure steam by 175 degrees.

Another, and perhaps more impressive, comparison is that if saturated steam at 50 pounds is used for heating and process operations, its generation alone entails the utilization of 89 per cent as much heat as does the generation of steam at 400 pounds carrying 175 degrees of superheat. The latter, furthermore, is capable of developing some 56 horsepower for each thousand pounds of steam used per hour in addition to providing the process steam. In other words, the 56 horsepower is made available at an eighth of the cost of the thousand pounds of steam for the process operations and at a small fraction, obviously, of what it would cost if the demand for low pressure steam did not exist.

Steam pressure is, of course, a highly important factor in the generation of mill power, for prime movers, whether steam engines or turbines, depend for their power upon the pressure and volume of the steam in gaseous form. Premature condensation of the steam during the power generating cycle serves to discount efficiency in power generation and the chief, though not the only, object of superheating the steam is to guard against just such premature power loss.

Superheating Economies

The economy of so doing, *i.e.*, of superheating the steam, is readily computed in the case of a steam engine. For example, the volume of a steam engine cylinder up to point of cut-off, say at 30 per cent of stroke, may conveniently be taken as unity and comparison made in steam consumption when operating on saturated steam at 200 pounds and on steam under similar pressure carrying 175 degrees of superheat.

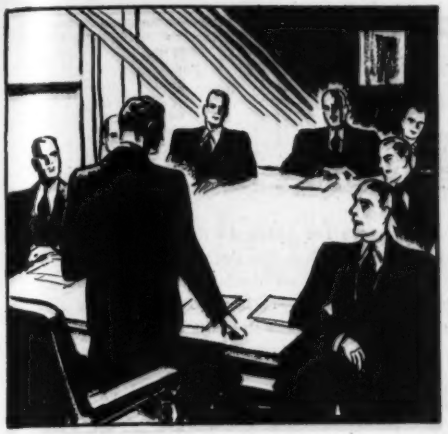


Courtesy: Foster Wheeler Corp

FIG. 1

Interior of furnace of 500-horsepower steam generating unit at the central steam plant of the Crocker, Burbank Co., Fitchburg, Mass., showing radiant superheater forming steam cooled rear wall, water cooled side walls and air cooled refractory floor.

[1]For other discussions on superheaters, see Paper Trade Jour., Sept. 1, 1927, Jan. 3, 1929 and Aug. 1, 1929.



. . . Who's to decide the RIGHT LUBRICANT ?

THE development of a lubrication recommendation for industrial or power plant machinery is like the examination given by a physician before his diagnosis—and prescription.

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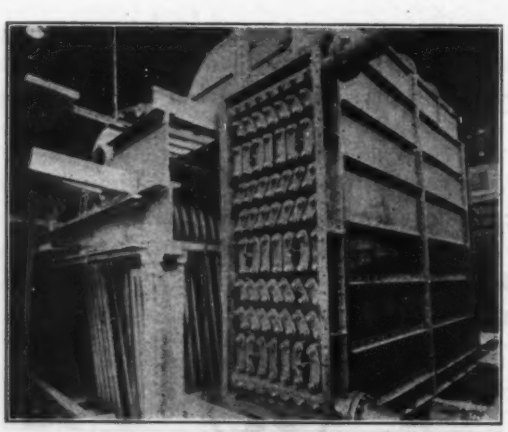
The addition of the superheat to the steam, in the first place, increases its volume approximately 29 per cent, so that at the same engine speed only about 77 per cent as much steam, in volume, is required as when operating on saturated steam. The generation of the superheated steam would entail, however, the addition of some 8.5 per cent more heat, discounting to some extent such apparent steam economy.

To secure like volume of steam at exhaust, thereby by correcting for the 20 per cent or so condensation occurring with the saturated steam, further balances have to be considered. In the using of saturated steam, 20 per cent more steam would have to be utilized, just to compensate for the condensation, placing the unit volume in such case at substantially 1.2. With 200 pounds steam carrying 175 degrees of superheat, the exhaust would still carry some surplus heat, about 25 degrees, and its volume would be 4.65 per cent greater than if in a saturated condition. Consequently, for like volume of steam at exhaust, the required unit volume comparable to that of 1.2 in the case of using saturated steam, would be 0.955. In steam consumption, a net saving of 20.4 per cent in favor of superheated steam operation results, consequently, or, resolved to "coal pile" units, a saving of 13.9 per cent in fuel consumption.

Such computations are fairly indicative of superheating economies in steam engine operation, for while in practice the actual amount of condensation, or heat absorbed by the cylinder, will vary with fluctuations in engine speed and also with cylinder jacketing and outside insulation conditions, the percentage of steam saving is ordinarily somewhat greater than that estimated. The superheating economies in the case of steam turbine operation are more difficult to determine, but are in practice also almost invariably greater than it is possible to figure theoretically from the data available.

The steam flows continuously in one direction, so there is no pronounced condensation and re-evaporation as in the case of steam engine operation and, while the saving in steam effected by superheating attributable to increased steam volume is important, the major increase in efficiency of steam turbines operated on superheated steam is due to the absence of moisture in the steam, decreasing frictional losses in the passage of the steam through nozzles and blades. This is especially true at high turbine velocities, as is also the improvement effected in windage losses by virtue of the lower steam density and the absence of moisture.

It has been pretty conclusively demonstrated in practice that in the operation of an average sized turbine, using steam with 200 degrees or so of superheat, the losses in buckets and nozzles



Courtesy: Foster Wheeler Corp.

FIG. 2

Detail of boiler arrangement at a plant of the Kimberly-Clark Corp., the headers of the single loop convection superheaters and part of the loops showing in the lower left hand corner, between the first and second banks of boiler tubes.

STEAM CONSUMPTION OF PRIME MOVERS

Type of Engine	Steam Condition lbs. per hp.-hr. Saturated Steam	100 deg. Superheat	200 deg. Superheat
Simple non-condensing	29-45	20-38	18-35
Simple non-condensing, automatic	26-40	18-34	16-30
Simple non-condensing, Corliss	26-35	18-30	
Compound non-condensing	19-28	15-25	13-22
Compound condensing	12-22	10-20	9-17
Simple duplex steam pumps	120-200	80-160	
Turbines non-condensing	21-45	18-40	15-36
Turbines condensing	9-30	7-28	7-26

The Superheater Company

are decreased about 1 degree for every 10 degrees of superheat. It has also been demonstrated that the decrease in economy for a single stage in a turbine is about double that represented by the amount of moisture in the steam. For instance, if the steam entering a stage contains 1 per cent moisture, the decrease in steam economy in that particular stage will be in the neighborhood of 2 per cent. With 3 per cent moisture, the decrease will be about 6 per cent and so forth.

The entropy of low pressure steam being higher than that of higher pressure steam, part of the steam is necessarily converted into water as the saturated steam expands adiabatically in a turbine. The moisture content of the steam gradually increases as it expands, with the result that the greater the ratio of expansion the greater becomes the decrease in turbine efficiency, the loss being gradual and cumulative. When steam carrying sufficient superheat is employed, on the other hand, no condensation occurs while the steam expands and does work, the temperature of the steam simply decreasing without introducing moisture. Incidentally, the superheated steam does not give up its heat as readily as saturated steam.

Other Benefits of Using Superheated Steam

The superheating economy indicated by a decrease in water rate of 1 per cent for each 10 or 12 degrees of superheat and a decrease in fuel consumption of about 1 per cent for each 20 degrees of superheat is further increased by the avoidance of the erosion of turbine blades due to the presence of moisture in the steam. This is a very important advantage, for with wet steam blade erosion is very marked and worn blading increases upkeep expenses and reduces turbine efficiency at an alarming rate, and has had much to do with the general adoption of superheated steam in turbine operation.

Still another outstanding benefit to be derived from the use of superheated steam is that smaller piping can be employed than would be satisfactory for the conveyance of saturated and wet steam. This may be an important consideration in many plants, particularly where the demand for steam has materially increased since the piping was installed. Since superheated steam gives up its heat less readily, higher steam velocities can be adopted with safety in pipe lines and radiation losses can be reduced quite generally by at least 5 per cent.

When conveying superheated steam, it has been found excellent practice to allow a velocity of 1,000 feet per minute per inch of pipe diameter, in steam pipes up to 15 inches in diameter. For a 2 inch pipe, a steam velocity of 2,000 feet per minute is permissible, for a 6 inch pipe 6,000 and for a 15 inch main up to 15,000 feet per minute. Even these velocities may be substantially increased for heating purposes, etc., up to 50 per cent in some cases, if the steam does not reach the saturation point before it is delivered to the heater.

Superheated Steam for Heating

When it comes to heating service proper, the use of superheated steam is, admittedly, not economical, for it gives up its heating comparatively slowly and less effectively than saturated steam. Steam above 50 pounds gauge, moreover, is rarely used for heating purposes and a concrete example will show why it does not pay to superheat such steam in order to secure a source of heat for effecting substantial elevation in temperatures.

To illustrate, it might be necessary to heat water from 300 to 400 degrees Fahrenheit, requiring the addition of 100 Btu. per pound of water. If saturated steam at 250 pounds gauge pressure

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were used, the temperature of which is 406.2 degrees Fahrenheit, only a small fraction of a pound of steam would be required to raise the temperature of each pound of water 100 degrees, since the latent heat of 250-pound saturated steam is 821.6 Btu. per pound. Actually, only about an eighth of a pound of such steam would be needed per pound of water.

The use of 50-pound saturated steam for such services would be out of the question, for the temperature of such low pressure steam is a matter of only 298 degrees, providing no usable temperature differential. By supercharging, its temperature could be elevated to 500 degrees, of course, and the hot low pressure steam cooled to 400 degrees to provide the required heat supply, but this would be far from economical. The total heat of 50-pound steam elevated to a temperature of 500 degrees is only 1,279 Btu. and at a temperature of 400 degrees 1,230 Btu. per pound, making available only 49 Btu. in the limiting heating range of 100 degrees. To elevate the temperature of a pound of water already at 300 degrees to 400 degrees would entail the use of 2 pounds, slightly more, of the highly superheated 50-pound steam, as against ⅛ pound of 250-pound saturated steam. If the 50-pound could be used in some prime mover or in the direct heating of feed water after being employed in such severe heating service, thereby making profitable use of the hundred degrees of superheat it still retained, there would be some excuse for such unusual heating operation, but if the steam with its still substantial superheat is exhausted the waste is obvious.

Since an adequate supply of saturated steam at suitable pressure is essential to the mills of the pulp and paper industries, however, such supply can be easily and cheaply obtained, without the necessity of sacrificing the numerous economies and benefits to be secured by the use of superheated steam in power operations or wasting heat, by the simple expedient of de-superheating a portion of the main superheated steam supply and correcting for the question of pressure, by means of a water spray or the bleeding of a turbine. De-superheating by means of a water spray is not to be recommended when the steam is to be used later in a prime mover, however, on account of the possibility of steam contamination.

Types of Superheaters

With the marked trend toward the general adoption of superheated steam generation in the power plants of the mill and in view of the many economies resulting from its employment in both power operations and in the conveyance of heat, some remarks concerning the more outstanding characteristics of the necessary power plant equipment, of superheaters in general, are of interest. As for the general types, they are but two, those which absorb heat by convection and the superheaters to which the heat of the incandescent fuel and combustion chamber is transmitted chiefly by radiation. Until comparatively recently, only convection type superheaters have been employed to any considerable extent, but within recent years excellent results have been secured with radiant superheaters, employed alone or in combination with convection type units.

The convection type superheater, developed and first introduced just a century ago, is doubtless still the more familiar and consists essentially of one or more loops of heating elements connected to inlet and outlet header and placed in the path of the hot gases from the boiler furnace. In water-tube boilers of the horizontal variety, the superheater elements are customarily mounted in inter-deck locations in the rear of the combustion chamber and above the first pass. In vertical water-tube boilers, the general location for the superheater elements is back of the first bank of boiler tubes. The superheater elements are looped in such forms as best conform to the tube arrangements of the individual varieties of boilers and at the same time, in such manner as to present their heat absorbing surfaces most effectively to the passage of the hot gases.

Though such superheaters are generally installed within the boiler setting, in the location specified, and receive their heat from the same flue gases and the same furnace as the boilers they

Courtesy: Foster Wheeler Corp.

FIG. 3

Single pass water-tube boiler at the plant of the Waldorf Paper Products Corp., St. Paul, Minn., showing convection type superheater and water walls.

serve, there are times and conditions of service when convection type superheaters can be profitably removed from the boiler proper and provided with their own individual heating furnaces. This is generally true when the design of the boiler is such as to prohibit the satisfactory installation of an integral superheater, when the steam output of the superheater has to be used in a highly superheated condition at a considerable distance from the boiler, or when one boiler of a battery is supplying steam for different purposes, not all of which require superheated steam.

Separately fired superheaters are often used where only a small portion of the steam supply is to be superheated or where a portion of the supply is to be heated to a considerably higher degree than the rest. They can be built in brick settings and are obtainable in capacities of from 3,000 to 200,000 of steam per hour with an efficiency of from 70 to 75 per cent. Portable superheaters are also available with capacities up to 3,000 pounds of steam an hour. With either of these types of separately fired superheaters, the amount of superheat added to the steam can be regulated at will by the amount of fuel burned.

In the radiant type of superheater, the heating elements form in effect part of the walls of the boiler furnace, usually of the rear wall. That is, the elements are mounted directly on the walls of the furnace, connected to inlet and outlet headers, and serve the double purpose of providing an effective water-cooled, or rather steam-cooled, furnace wall and an efficacious superheater of marked flexibility. They are particularly efficient at low rates of boiler steaming, and have even been applied with success for superheats as low as 40 degrees. Installed in combination with convection type superheaters, they have proved very effective in securing relatively constant and high final steam temperatures, and, being of distinctly rugged construction, are long lived and notably free from upkeep burden.

Taking up very little room in the boiler furnace, they have proved especially adaptable to installation in existing boilers where temperatures were inadequate for the economical operation of present day steam turbines and where there was not sufficient room within the boiler setting to accommodate additional convection superheater surface. Occupying so little space, they mini-

ANNOUNCEMENT

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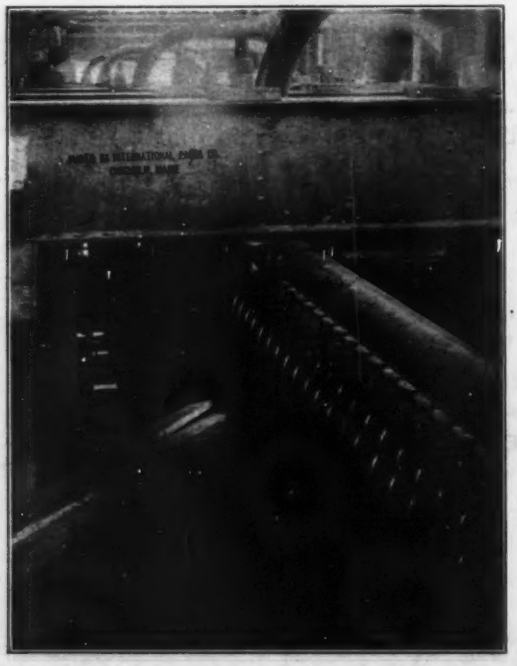
mize the draft losses at higher boiler ratings, keeping such wastes much below those which would accrue were the superheater of the convention type. The superheaters may be placed in any boiler having refractory walls and not only serve to protect the more or less perishable brickwork they cover, but to relieve furnace conditions by the absorption of radiant heat and the introduction of a relatively cool, back wall area. The result is that their use tends to increase furnace capacity and enable the boiler to be economically operated at higher steam ratings.

Where high degrees of superheat have to be secured, where wide load fluctuations exist and where space is limited within the confines of the combustion chamber and boiler setting, the use of convection and radiant type superheaters connected in series has proved highly successful. The steam from the boiler first passes through the convection heater, is dried thoroughly and moderately superated, and then passes through the radiant heater where it absorbs additional heat and is raised to the desired temperature. With such a combination arrangement of superheaters, the final temperature of the steam remains substantially constant at all effective boiler ratings, the tendency of the temperature to increase in convection superheaters being counterbalanced by the tendency of the temperature to decrease in radiant superheaters slightly with the rate of boiler steaming.

Radiant Type Superheater Installation

At the central steam plant, erected about a year ago by the Crocker, Burbank Company of Fitchburg, Mass., there is an exceedingly interesting example of modern radiant superheater application. The plant, also, is a good example of sound engineering and incorporates many noteworthy refinements. It was built to replace two obsolete boiler rooms in two of the nine paper mills operated by the company and its battery of three 500-horsepower steam generating units is well able to carry the full steam demands of the two paper mills served.

The boilers are operated normally at 300 per cent of rating, furnish steam at 385-pound pressure and 175 degrees superheat, employing radiant type superheaters, and an over-all efficiency of better than 84 per cent is realized. The furnaces are fired on pulverized coal and their side walls are almost entirely water cooled, the bare tube type, closely spaced, construction backed by refractory being employed, and the floors of the furnaces are of air cooled refractory, the air for cooling being used subsequently in the pulverized fuel system.



Courtesy: The Superheater Co.

FIG. 4

One of the efficient convection type superheaters serving the boilers in the power plant of the International Paper Co. at Chisholm, Me.

The front furnace walls are of solid refractory and contain the fuel burners and the secondary air and ignition doors. Radiant superheaters are placed in the rear walls of each furnace, covering them almost entirely, and efficient economizers recover a large portion of the heat in the flue gases. The steam output passes through turbines before being used in process work, the turbines functioning so far as the process steam is concerned as reducing valves.

The high efficiency of the steam generation is attributable unquestionably to the effectiveness of the heat reclaiming auxiliaries, the economizers and superheaters. The economizers, which present 2,500 square feet of heating area to the flue gases from each of the boiler units, are reputed to absorb about 10 per cent of the heat utilized in the system and the economic efficacy of the radiant superheaters is of like high order. They effect a reduction in water rate of about 15 per cent and an 8 or 9 per cent reduction in fuel consumption. Incidentally, the superheat curve obtained from the installation shows a gradual decline as the boiler ratings increase, which is a very desirable condition for high pressure turbines discharging at low or intermediate pressures.

Installations of Convection Type Superheaters

Convection type superheaters are also effecting marked economics in many plants serving the paper making industry. At one of the establishments of the Kimberly-Clark Corporation, for instance, several large water-tube boilers, operated normally at between 250 and 350 per cent of rating on pulverized coal firing, employ single loop convection superheaters located between the first and second banks of boiler tubes. These units provide some 152 degrees of superheat at 300 per cent of boiler rating and are responsible for a reduction in water rate of 10 to 15 per cent and a decrease in fuel consumption of about 7½ per cent.

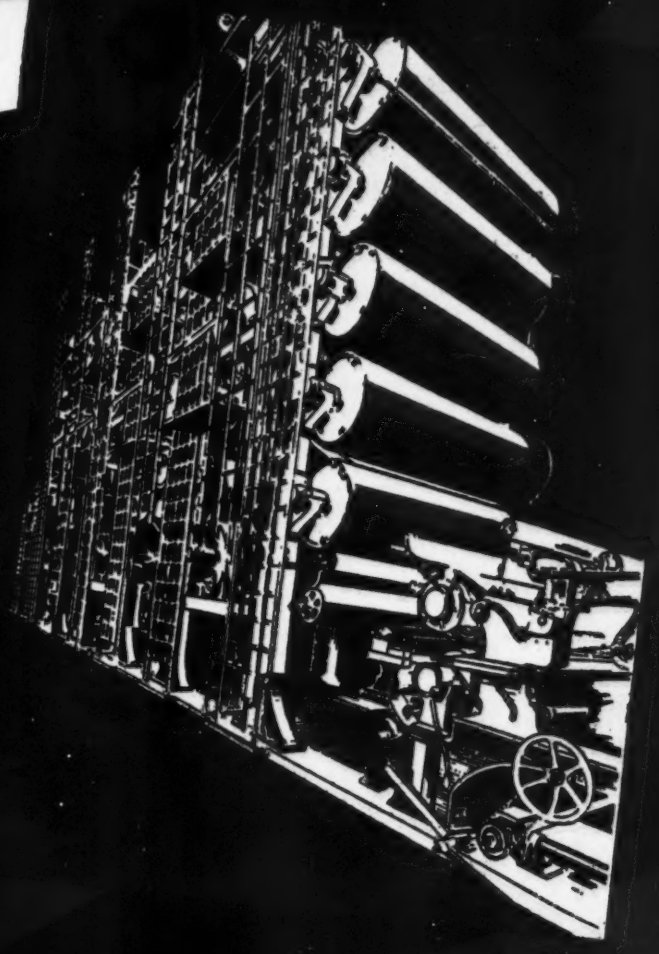
At the Kapuskasing (Ont.) plant of the Spruce Falls Pulp & Paper Company, the boiler arrangement of which was illustrated in these columns January 3, 1929, convection type superheaters, composed of two rows of straight elements connected by forged steel return headers, are located in a horizontal position between the top drums of the large semi-vertical water-tube boiler. The steam generator is designed for operation at 333 per cent of rating, generating steam at 250 pounds pressure with some 150 degrees of superheat. The superheating economies in this instance are a reduction in water rate of about 13 per cent and a fuel saving of some 7½ per cent.

Two single pass water-tube boilers of 1,170 square feet heating area at the Waldorf Paper Products Company, St. Paul, Minn., are provided with convection type superheaters and water walls. In the neighborhood of 85,000 pounds of steam at 635 pounds pressure, with 235 degrees of superheat, are generated hourly and the part played by the superheaters effects a reduction in water rate of close to 20 per cent and a saving in fuel consumption of about 12 per cent.

At the Wausau Paper Mills, Brokaw, Wis., two vertically baffled, horizontal, water-tube boilers, rated at 512 horsepower, have within the past year or two been provided with double loop, convection type, superheaters. This double loop arrangement is in effect a row of loop elements within the loop formed by a second row of loop elements, connected to common inlet and outlet headers, is distinctly compact, and yet presents a large area of heat absorbing surface per lineal foot of tube. It well meets the requirements for a modern low pressure superheater, the boiler at the Wausau Mills operating at a pressure of only 125 pounds per square inch.

In each of the installations cited, the superheaters have effected marked economies by substantial reductions in water rates

RETURNING THE COMPLIMENT



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What are you making? Perhaps Vertical Dryers offer the solution to your problem of more dryers without adding floor space. Think it over and let's talk it over.

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MINUTE MEN of the INDUSTRY

GOODYEAR OF AKRON HAD TO HAVE A MAAG GEAR—AND QUICK. RUSHED IT TO THEM BY AIRPLANE.

JUST A MINUTE, BROTHER. WE'RE NOT SHIPPING JORDANS BY PLANE JUST YET, SO DON'T GET US WRONG. WHAT WE'RE TRYING TO IMPRESS UPON YOU IS THAT SHARTLE BROTHERS HAVE THE DESIRE AND THE TYPE OF ORGANIZATION TO RESPOND IN EMERGENCIES—AND DO SO.

"MINUTE MEN" AND NO MISTAKE. COULD BRING UP DOZENS OF INSTANCES WHERE WE HAVE HELPED THIS MILL OR THAT ONE OUT OF A TIGHT PLACE AND GLADLY.

MAKE "WIRE SHARTLES" A STANDING EMERGENCY ORDER. MIGHT SEND YOU A JORDAN BY PLANE IN A PINCH.

and by curtailment of fuel consumption, and these cases are in no way exceptional. In fact, they simply typify what can be done in the line of reducing power costs through more efficient steam generation in the general run of well appointed power plants serving pulp and paper mills. Many mills now appreciate the benefits of superheating the steam supply and by so doing evading in large part the burden of expense otherwise imposed for power operations, it is quite true, but there are still many establishments which have yet to reconcile their requirements for power steam and for process steam.

Power requirements are dependent upon steam pressure and temperature, process requirements upon drop in pressure and sacrifice in temperature. There need be no conflict between these demands, for with the efficient generation of power steam, process steam is made available with the essential power operations taken care of as a by-process. It may not always be possible to balance exactly the power and process demands for steam, but there need be no waste of heat when superheating the main steam supply. Heat can be extracted easily and readily from superheated steam and put to profitable use, but lack of heat with its resulting moisture content in both power and process lines is a costly burden which invariably imposes a severe tax on the power plant and mill.

Fidalgo Litigation Ended

R. D. Kehoe, president of Fidalgo Drying Systems has sent out the following notice which is self explanatory:

"I am glad to announce that the litigation involving the complete control of patents relating to the drying of shredded pulp has been settled and the following statement has been signed for publication by Ossian Anderson, president of the Fidalgo Pulp Manufacturing Company of Anacortes, Washington and R. D. Kehoe, president of the Fidalgo Drying Systems, Inc., New York City.

" 'Arrangements have been completed whereby the Fidalgo Drying Systems, Inc., can now sell drying machinery and apparatus under its own patent and also under licenses granted by Fidalgo Pulp Manufacturing Company of Anacortes, Washington for the use of any patents owned by them relating to this system of drying pulp.'

"This terminates an action that has been in the Courts since 1927 and makes it possible for Fidalgo Drying Systems, Inc. to quote on and construct in the United States, Canada and all foreign countries, apparatus and process for drying of shredded pulp and to offer its customers complete patent protection.

"Fidalgo Drying Systems, Inc. are now in position to offer to the trade the benefit of experience and continued research in the field of pulp drying. A further development of the art is the new combination baler with which it is possible *in one operation* to produce a bale of uniform weight and moisture content. Another valuable addition to the art is the continuous vacuum drying of shredded pulp for saving of floor space and where the application requires it.

"The undersigned also feels this is a fitting occasion to announce that our installation at Tacoma, Washington in the plant of the St. Regis Kraft Company will be modernized to conform with latest experience both in drying and baling."

Redlein Joins New Jersey Paper Concern

HADLEY, N. Y., September 13, 1930.—It was learned this week that William Redlein, formerly general manager of the Luzerne Paper Corporation, has secured a similar position with a prominent paper concern in New Jersey, where he has already taken up his new duties. For a time after the local concern encountered financial difficulties it was decided by Mr. Redlein to continue the business but eventually the entire property was taken over by a large power company. Mr. Redlein has already moved his family to New Jersey.

To Use Maizewood at Chicago Exposition

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, September 15, 1930—Maizewood, an insulating wallboard manufactured in Dubuque, Iowa, from Iowa and Illinois cornstalks, has been chosen by the Century of Progress Exposition to provide roof and wall insulation in the first two buildings for which contracts have been let.

Shipments of roof insulation have already been made for the Administration buildings of the Exposition, now under construction on the Chicago lake front southeast of the Field Museum. The total order for the Administration and Travel and Transport buildings amounts to over three-quarters of a million square feet of one-half inch insulation on which delivery must be made within sixty days. The roof of the Travel and Transport building alone requires about five acres of inch-thick insulation. A trainload of cornstalks, purchased from Iowa and Illinois farms, is required for the order.

The general contractors are the J. B. French company for the Administration building, and the John Griffiths & Son company for the Travel and Transport building. These companies in turn placed the contracts for roof construction of both buildings with the Luse-Stevenson company.

The process for the manufacture of insulating board from cornstalks was developed at Iowa State College at Ames under the direction of Dr. O. R. Sweeney. The Dubuque plant is the only one of its kind in existence.

One of the central purposes of the Chicago World's Fair, which opens in 1933, is to demonstrate the contributions of science to human progress. Selection of the Iowa product by the World's Fair is regarded by Maizewood officials as a practical application of its interest in new discoveries.

The Maizewood Products Corporation was re-organized a year ago, when a strong group of middle-western business men who had organized National Cornstalk Processes, Inc., obtained a controlling interest in the company.

The primary object sought by the men who associated themselves in National Cornstalk Processes, Inc., is said to be the development of industries which will open up new sources of income to corn belt farmers. Former Governor Frank O. Lowden of Illinois, and George N. Peek of Moline, both active leaders in farm relief activities in recent years; executives of the International Harvester Company and Deere & Company; and other leaders in business and agriculture in Iowa and Illinois were among the organizers of the company.

Perkins Novelty Co. Formed

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 16, 1930.—The American Tissue Mills, Inc., has re-opened its mill at Cushman in North Amherst, that has been closed for the past two years for the manufacture of paper dolls and other novelties. A new subsidiary of the American Tissue Mills, Inc., has been formed, the Perkins Novelty Company, with Benjamin F. Perkins, J. Lewis Perkins and Mrs. Malvena Perkins as the incorporators. The manufacture of waxed paper once carried on at this mill is now carried on at the Holvoke mills of the company.

The Cushman mill is located close by the tracks of the New London Northern Division of the Central Vermont railroad affording good shipping facilities. An expert will supervise the manufacture of the lines of novelties made here.

Reprints Available

Members of the Technical Association of the Pulp and Paper Industry may receive a copy of any of the following on request. "Index to the Technical Association Section of the Paper Trade Journal," January to June, 1930. "A Roster of Officers, Committees and Members of the Technical Association" and the "Bibliography of Wood Pulp Strength Testing," by W. F. Moore.

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BABSON OPTIMISTIC

The business philosopher of Wellesley, Mass. is out with an optimistic prediction regarding the improvement in the depression which has lasted something over a year. Mr. Babson last fall so accurately foretold what was about to happen that his statements instinctively inspire respect. On the present occasion he not only predicts an early betterment in business, but suggests interesting ways in which everyone can cooperate in this much to be desired consummation.

"The four best means of bringing this about," he said, "are: (1) reducing overhead by moving men from the office into the field; (2) giving better measure to customers; (3) discovering new products and new uses for present products; and (4) spending more money on advertising.

"As already stated, the balance of 1930 must show an improvement, whatever policy is followed by American business; but what is to happen in 1931 will largely be determined by the policy of American business toward these four recommendations given by me today: reduced overhead, better measure, more research work and increased advertising."

In saying that an optimistic outlook is justified, "at least for the coming fall," Mr. Babson added:

"During the past year consumption has fallen off only about 10 per cent, taking all lines of industries and all sections of the country. Of course, in certain lines the falling off has been greater and in other lines it has been less; but, on the average, consumption has fallen off not more than 10 per cent.

"Yet, while consumption has fallen off only 10 per cent, production has fallen off 20 per cent and the transportation of goods has fallen off 30 per cent. This means that the inventories of manufacturers, jobbers and retailers are becoming abnormally low.

"If consumption, production and transportation had fallen off about the same percentage, there might be no logical reason for improving business this fall. Under the existing circumstances, however, it is very possible that there may soon be a stampede of orders and congestion of freight in certain lines and sections.

"I am making no forecast as to 1931, which may average to be a quiet and uneventful year; but I certainly am optimistic regarding this fall. It is just as evident today that business is now bound to improve as it was evident a year ago that the high pace of early 1929 could not be kept up."

Stating that the average man buys only on a rising market, he continued:

"In order to get people to buy copper, iron, lead or any other commodity, it is necessary to mark up the price thereof. This same principle is very evident in the stock market. The more the market goes down, the more people wish to sell. The more the market goes up, the more people wish to buy.

"In all departments of industry and commerce a rising market is a great stimulant to business. As it is impossible to have a rising market continually, prices must be knocked down once in so often in order to have rising markets follow. Hence it is to the business man's interest to have these declines as rapid as possible, so they will not last long."

Of his "four concrete suggestions," Mr. Babson said:

"Perhaps advertising is the most important factor of all. Certainly advertising should go hand in hand with the other three factors. Therefore I wish to go on record today as definitely advising all clients to increase their advertising appropriations and to use newspapers, magazines and outdoor advertising in their respective campaigns and communities. The need of the hour is to increase the circulation of money."

Unless all signs fail adequate prosperity is not far away. As another business sage stated recently that the present depression was in considerable degree mental, everyone can help more than is at first sight apparent, perhaps, in causing it to disappear. The PAPER TRADE JOURNAL hopes that Mr. Babson's latest remarks will be carefully considered by business men in general and by paper men in particular.

INDUSTRIAL RESEARCH LABORATORIES

The Research Information Service of the National Research Council is preparing a revision of its "Industrial Research Laboratories of the United States, Including Consulting Research Laboratories," the third edition of which was published in 1927.

This bulletin is the only list of research Laboratories known to the compilers and is undoubtedly used by many people, not only as a source of information concerning such laboratories but also as a mailing list for important announcements concerning new apparatus and processes, and for compilations of interest to research workers in industrial fields.

In securing additional names of firms to which questionnaires should be mailed for the revision, the membership lists of all of the national societies interested in chemistry, physics and engineering were searched for names of men who listed themselves as research or development chemists, physicists or engineers; the personnel notes of the important technical journals were read for similar information; and finally, the names of laboratories publishing research papers were secured from the pages of these same journals. In this way were secured the names of 1,250 firms,

all of which are believed to maintain research or development laboratories.

In spite of this rather extensive search, however, it is felt that many firms maintaining research laboratories have been overlooked. Since the value of such a compilation is in direct proportion to its completeness, it is hoped that every one interested will cooperate in this undertaking.

If, therefore, your firm is not one of the 2,250 to which a questionnaire has been sent (1,000 in the third edition and the 1,250 additional names secured as above), will you please write immediately to the Research Information Service, National Research Council, Washington, D. C., requesting that a questionnaire be mailed to your firm, in order that proper information may be secured regarding the research personnel and work carried on in your laboratory. This listing involves no financial obligation on the part of any firm and may be of considerable value at some time in the future.

Paper Mills Enroll In Safety Campaign

ALBANY, N. Y., September 13, 1930.—Many paper manufacturing concerns in this section are included in the nineteen hundred industrial firms already enrolled in the annual accident prevention campaign being sponsored by Associated Industries of New York State. The campaign will terminate early in December when prizes will be awarded the winners. Establishments have been divided into separate classification and groups in which firms will compete against others of a comparable size and with a comparable hazard for a period of three months in an endeavor to reduce still further the losses in lives and limbs which frequently occur in industry. For the past few years through these campaigns there has been recorded a gradual reduction in both accident frequency and severity in the industries of the state and the one this year has shown the largest enrollment.

Enrollments have been filed from virtually every city and village in the state and the industries enlisted represent every type of mechanical operation in the commercial life of the state. Chamber of Commerce organizations, trade associations, and other industrial bodies are co-operating with Associated Industries in the conduct of the campaign. It was announced that competing firms will report their accidents weekly to the main office of Associated Industries which will then return to each contestant each week a list of percentage standings of the various concerns. At the conclusion of the drive a mounted bronze plaque suitably inscribed will be awarded to the firm in each group which has the best safety record. Certificates of merit will also be awarded to other firms making exceptionally good records.

Action Brought By Knowlton Bros. Postponed

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., September 13, 1930.—The action recently brought by Knowlton Brothers against the Beebee Island Power Corporation was postponed this week although the trial was scheduled. The action was brought to compel specific performance of a contract by the defendant to develop water power in which the paper company holds a large interest.

The firm of Knowlton Brothers is very desirous that the power development project be carried out in order that it may make use of the energy for the operation of its paper mills which would also eliminate heavy power bills. The company claims that the Beebee Corporation made an agreement in 1919 to develop the power but after carrying out preliminary details the project was abandoned. Since then the paper concern has made several attempts to have the agreement fulfilled.

Paper Production Decreases in July

According to identical mill reports to the statistical department of the American Paper and Pulp Association from members and co-operating organizations, the daily average paper production in July showed a decrease of 8 per cent under June, 1930, and a decrease of 12 per cent under July, 1929. The daily average wood pulp production in July registered a decrease of 18 per cent under June, 1930, and a decrease of 13 per cent under July, 1929.

The July production of newsprint, uncoated book, paperboard, wrapping, bag, writing, tissue, hanging and building papers registered a decrease under July, 1929 output. The production of all major grades of paper during the seven-month period ending July, 1930, registered decreases under the totals for the same period of 1929. Shipments of all major grades, excepting hanging paper, also registered decreases during the seven-month period of 1930 as compared with the same period of 1929.

All grades of paper, excepting writing, tissue and hanging, showed decreases in inventory at the end of July, 1930, as compared with the end of June, 1930. As compared with the end of July, 1929, all grades, excepting paperboard, wrapping and bag papers, showed increases in inventory.

Identical pulp mill reports for the seven-month period ending July, 1930 indicated that 8 per cent more mitscherlich sulphite pulp, 2 per cent more bleached sulphite pulp and 2 per cent more kraft pulp was consumed by reporting mills than for the same period of 1929. The total shipments to outside markets of all grades of pulp during the first seven months of 1930 were approximately 10 per cent below the total for the same period of 1929.

All grades of pulp, excepting easy bleaching sulphite and mitscherlich sulphite, registered a decrease in invenory at the end of July as compared with the end of June, 1930. As compared with July, 1929, groundwood and soda pulps were the only grades whose inventories registered decreases. The tonnage increase in the other grades, however, was not large.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JULY, 1930

Grade	Production tons	Shipments tons	Stocks on hand end of month tons
News print	102,840	103,018	29,284
Book (uncoated)	68,196	68,345	62,839
Paper board	177,905	179,299	57,583
Wrapping	42,132	45,585	41,695
Bag	12,674	12,912	5,013
Writing, etc.	26,632	26,121	51,784
Tissue	12,312	11,731	12,858
Hanging	4,090	3,400	5,862
Building	4,620	5,581	3,750
Other Grades	17,181	20,205	16,237
Total—All grades	468,582	476,197	286,905

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JULY, 1930

Grade	Production tons	Used during month tons	Shipped during month tons	Stocks on hand end of month tons
Ground wood	69,201	77,555	1,899	94,245
Sulphite news grade	31,361	29,768	1,637	7,797
Sulphite bleached	21,068	20,061	1,432	4,175
Sulphite easy bleaching	2,552	2,208	203	1,088
Sulphite Mitscherlich	6,878	6,147	707	1,565
Kraft pulp	28,022	24,262	4,483	7,214
Soda pulp	19,666	12,783	6,887	3,440
Pulp—Other grades	80	.....	80	12
Total—All grades	178,828	172,784	17,328	119,536

Japan To Curtail Paper Production

[FROM OUR REGULAR CORRESPONDENT]

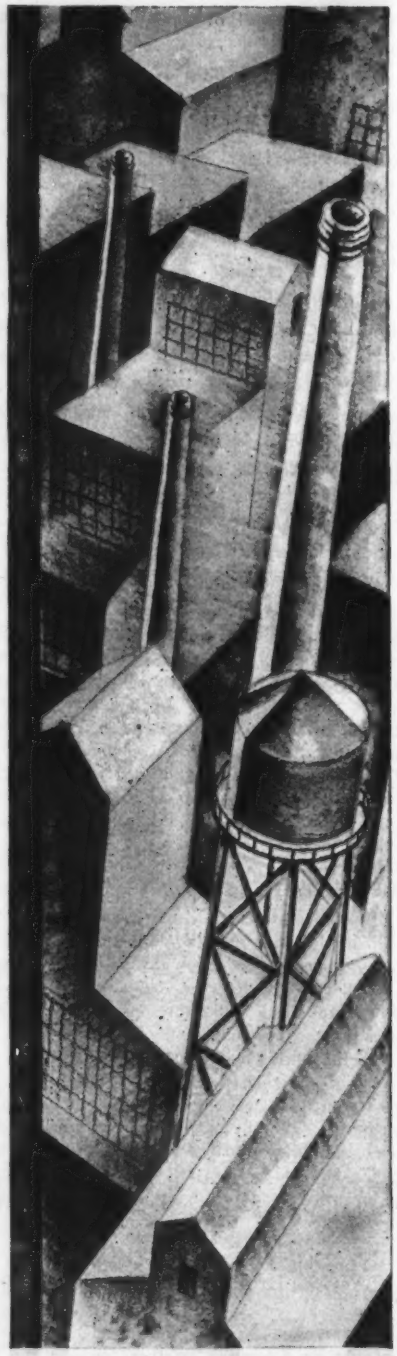
WASHINGTON, D. C., September 17, 1930.—The member mills of the Japanese Paper Association have agreed to curtail production of printing paper, excluding news print, writing and drawing paper, by 30 per cent for an indefinite period depending on market conditions and it is probable that these restrictions will be extended to other varieties of paper, according to a report from Trade Commissioner P. P. Steintorf at Tokyo. The Japanese paper industry has been suffering from heavy stocks which continued to grow owing to depression in both the domestic and foreign markets.

STRONGER THAN STONE OR STEEL

are the foundations of Mathieson's Leadership

By CARL R. MILLER

No. 5 in a series of advertisements describing the position of The Mathieson Alkali Works in the chemical industry



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It is a well known fact that Mathieson was the first chemical manufacturer to introduce the standard multi-unit tank car, thereby rendering chlorine shipments safer and more economical. Mathieson was a leader in establishing a completely modern plant for manufacturing synthetic ammonia. Purite, fused soda ash, and H T H, high-test hypochlorite, were developed by Mathieson chemists and engineers... modern contributions of a thoroughly modern organization founded on strong foundations of Resources, Research, Service.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For additional information regarding these abstracts subscribers should address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C.

Filtration of Paper Mill White Water. Benjamin F. Miller, Harvard Medical School; and Lycurgis Laskaris, Atlantic Refining Co. Paper Trade J. 92, No. 15, 62-65 (Oct. 10, 1929).—A study of the effect of various factors on the capacity and efficiency of continuous vacuum filter save-alls, such as the Oliver or American Disk types. Increase in the consistency of the filter mix decreases the capacity and increases the efficiency of fiber recovery of the unit. The capacity falls off very rapidly with increasing time of filtration from 0.1 to 0.4 min., after which it drops off slowly. A great change in vacuum makes a relatively small change in filtering capacity; e.g., in one case a 400 % increase in vacuum increased the capacity only 20%. In general, the freer the "sweetening" stock, the greater the capacity and the lower the efficiency. With certain installations it is possible to increase the depth of the filter mix, thus gaining additional filter area, which obviously gives additional capacity; if the latter is unnecessary, the speed of rotation should be decreased to the point where the capacity at the new level is the same as the former flow. which changes increase the efficiency without effecting the capacity, since the efficiency is aided by increased time of filtration.—A.P.-C.

Decantation of Backwater and Effluents. Anon. World's Paper trade rev. 92, 562-566 (Aug. 16, 1929); Paper mill 52, No. 36, 20-21 (Sept. 7, 1929).—A description of the Dencoel sedimentation save-all, with a discussion of its efficiency.—A.P.-C.

Refiner. L. H. Wessel assignor to The Hermann Mfg. Co U. S. pat. 1,706,944, March 26, 1929.—The invention provides a construction of conical refiners such as to facilitate the removal of the plug and shell liners and such that it is unnecessary to disassemble the bearings or remove the packing from the shaft when removing the plug.—A.P.-C

Process and Machine for Thickening Pulp. Anton J. Haug and Richard J. Haug. U. S. pat. 1,717,604, June 18, 1929.—A hollow, cylindrical screening drum is mounted to rotate within a cylindrical casing. One end of the drum is closed with a suitable head and the other end is open except for a relatively small ring along the circumference. The dilute pulp is introduced at the axis of the drum and delivered at a relatively low velocity inside it across nearly the full width thereof and slightly above the lowest point. The inlet is adjustable to regulate the amount of stock admitted. Preferably the discharge of the inlet spout is curved in the direction of revolution of the drum, and the gate should be so adjusted that when the machine is in operation a layer of pulp of suitable thickness flows continuously on the straining surface in the direction of revolution of the drum. The latter is rotated at such a speed as to create a substantial centrifugal force which throws the water forcibly out of the pulp through the screen and into the casing, where it drains out almost immediately through an outlet spout, no part of the screening surtace being submerged in water at any time. The pulp is removed by means of a spray pipe extending into the drum and close to the bottom thereof, the jets having sufficient force to move the thickened pulp into the range of operation of a scraper which does not come in direct contact with the wire. The discharge of the pulp may be facilitated by making the drum slightly tapered. The spray pipe may be mounted so that it can be reciprocated. The wire which forms the screening element is supported at the inner edge of a series of clamping rings arranged in pairs. Each pair of rings is circumferentially grooved near its inner margin to receive the fabric and a rod or wire which is located in the groove between cooperating rings. This rod assists in clamping the fabric securely between the rings and in stretching it as the rings are drawn together by means of bolts. In order to hold these rings in proper relationship to each other, and also for the purpose of adjusting them to stretch the wire, they are mounted on a series of threaded rods provided with adjusting nuts on either side of each pair of rings.—A. P.-C.

Mill. C. G. Willard assignor to The Mine and Smelter Supply Co. U. S. pat. 1,690,497, Nov. 6, 1928.—The two heads are provided with means for effecting lateral movements of the charge, while maintaining the length of the chamber.—A.P.-C.

Paper Machines were Specially Designed for St. Lawrence Paper Mills. Anon. Pulp Paper Mag. Can. 27, 725 (May 16, 1929).—A brief description of the two new 160-inch Dominion Engineering paper machines recently installed in the plant of the St. Lawrence Paper Mills, Three-Rivers, Que.—A.P.-C.

Widest Paper Machine Described. C. E. Kinne. Bagley and Sewall Co., Watertown, N. Y. Paper Mill 52, No. 18, 10, 12 (May 4, 1929).—A description of the new 304-inch Bagley and Sewall Paper Machine recently installed in the mill of the Great Lakes Paper Co., Fort William, Ont.—A.P.-C.

Inter Conversion of Freeness Scales*

By D. S. Davis[1] and L. E. Simerl[2]

At least six types of freeness testers are in use today in the United States and Canada and our technical literature, from time to time, carries data obtained with at least four of these. No two types of testers agree in freeness scale and the situation is further complicated by the fact that with some the freeness number is the volume of water draining through the fiber mat above a certain rate, with another it is proportional to the difference between this volume and a constant and with still another it is the time required for a certain volume to drain through the mat. In addition, the standard conditions for testing differ widely: two standard temperatures and three standard consistencies are in use. As the result of a recent suit one tester may no longer be used in the United States and many, in changing to some other type, will need some idea of the character of the various conversion curves.

It is the purpose of this paper to present the general nature of many of these curves. But one stock was studied; neutral sulphite refined to various degrees, and hence these conversion charts are applicable in only an approximate manner in cases where the stock, the type of refining, pH value and amount of filler differ from the conditions mentioned here. A change in

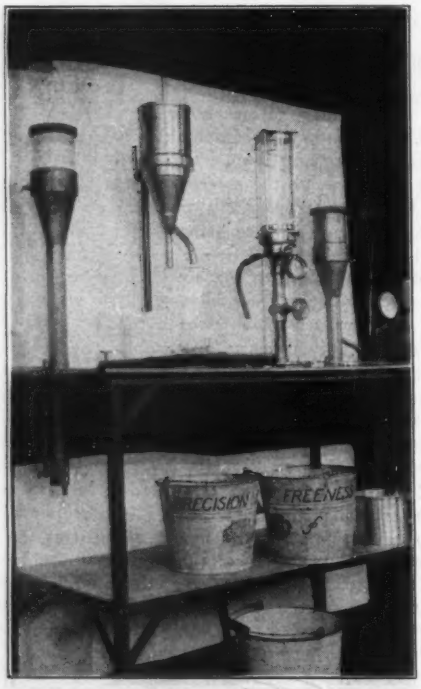

FIG. 1.

one or two of the conditions, however, usually does not greatly alter the shape of the curve but serves merely to change its position on the plot. Thus, under altered conditions, once the shape of the curve is known one or two determinations are sufficient to enable construction of a fairly reliable conversion curve.

Most of the freeness testers studied are shown in Figs. 1 and 2, where the lettering indicates both the tester and the freeness value under the conditions of test as described in Table 1.

* Presented at fall meeting of TAPPI, Erie, Pa., Sept. 3-5, 1930.

[1] Member TAPPI, staff mathematician, The Mead Corporation, Chillicothe, Ohio.

[2] Laboratory assistant, The Mead Corporation, Chillicothe, Ohio.

Experimental

Sheet sulphite was mixed thoroughly with water, using a Lightning mixer, until the stock was completely cleared. The sample was divided into several parts and these were refined for various lengths of time in a laboratory refiner. Each batch was then diluted to a consistency of a little over 0.4 per cent and from each were prepared the duplicate individual samples for test at the desired conditions. All tests were made according to

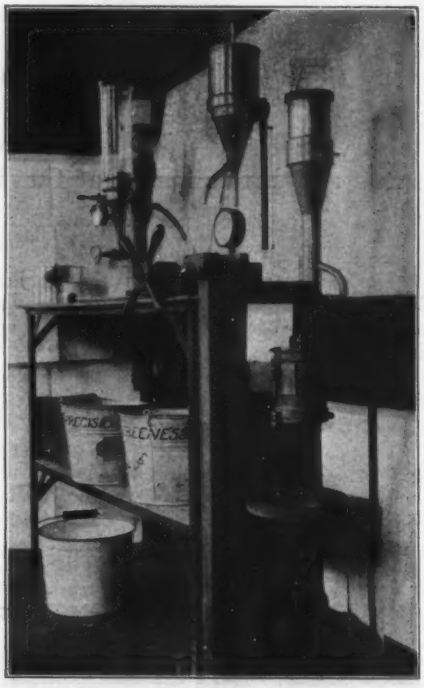

FIG. 2.

procedures previously published [8, 11, 12] with the addition that after each test the stock was washed from the cup of the tester, filtered and dried at 105 deg. C. as a check on the consistency. All tests were made within 0.1 gram of the desired bone-dry sample-weight and within 1 deg. C. of the desired temperature, while in the majority of cases the tolerances were 0.03 grams and 0.5 deg. C. Each value was corrected to the exact sample-weight and temperature by use of the previously published correction charts. [8, 9, 10, 12, 13] the circles, triangles and plus signs denote the experimental points in cases of direct comparison between testers. Where no experimental points are given the

Table I

Symbol	Unit	Temperature	Volume of sample, cc.	Wt. bone-dry stock, grams	Tester
g	cc.	20°C.	1000	3	Original Green[3]
C	cc.	20°C.	1000	3	Canadian Standard[4] (Not shown in Figs. 1 and 2.)
s	cc.	20°C.	1000	2	Schopper-Riegler[5, 6]
f	cc.	20°C.	500	2	Williams 50-50[7] Indicating Tester
nF	cc.	20°C.	1000	4	Williams 1925, Model B[8] (Not shown in Figs. 1 and 2 but similar to the 1927 Model B.)
nF	cc.	20°C.	1000	4	Williams 1927 Model B[9, 10]
P	secs.	25°C.	1000	3	Williams Precision[11, 13]

(Where sample-weight and temperature differ from those above, these are indicated by subscripts following the letter, thus $P_{4.35}$.

comparisons were made indirectly through the use of the present or previously published data. [8, 9, 39] Thus no direct comparison between the Schopper-Riegler and Canadian Standard testers was made yet it is possible to construct the curve quite accurately by means of the direct comparisons between the Precision and Schopper-Riegler and the Precision and Canadian Standard.

The data are presented in Fig. 3. 4. and 5 in which the scale of each of the three most widely used testers is considered as the independent variable. Except where otherwise indicated the conditions of sample-weight and temperature are those given in Table 1. At the top, Fig. 3 carries two additional Precision scales (constructed from Eq. 34 & 35 of Table II), one for 3 grams and 20 deg. C. and the other for 4 grams and 20 deg. C. It will be seen that a freeness of 100 seconds at 3 grams and 25 deg. C. on the Precision corresponds to values of 297, 313, 350, 371, 39.3 and 152 for the Williams 1925-B, Canadian Standard, original Green, Williams 1927-B, Schopper-Riegler and Williams 50-50 testers respectively. The curve labeled S is for a kind of Schopper-Riegler value more closely related to freeness values of other testers of this orifice type than is the usual Schopper-Riegler value, s, and is defined by the equation,

$$s = \frac{1000 - S}{10}$$

from which it will be seen that S is the actual volume of "free" water flowing through the side orifice. The value of S corresponding to the values above is 608 while those for $P_{4,20}$ and P_{20} are 150 and 113, respectively. The use of the two uniform auxiliary scales obviates construction of fourteen additional curves covering these cases.

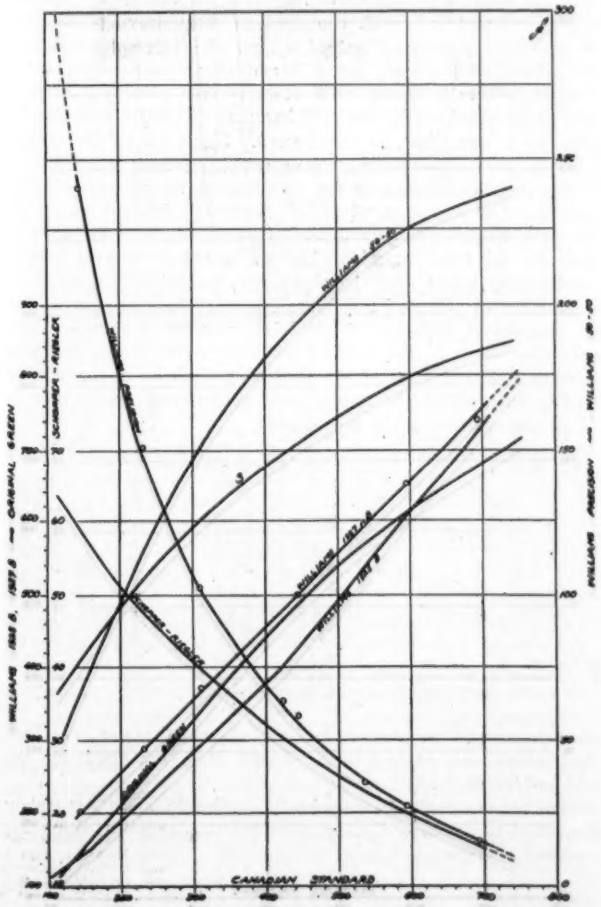

FIG. 4.

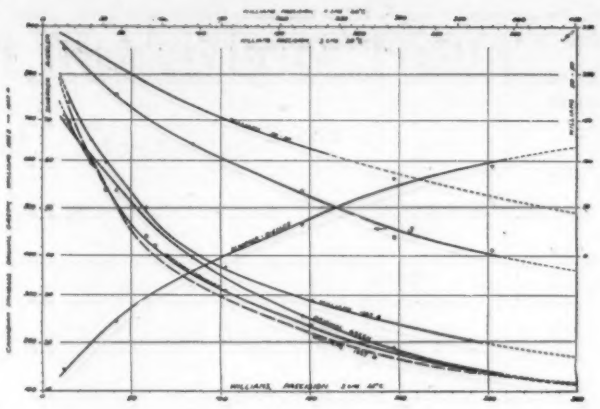

FIG. 3.

While the 50-50 and 1927-B scales are not plotted as functions of each other, conversion between the two may easily be made. Thus to find the value on the 50-50 scale corresponding to 500 on the 1927-B, follow the 500 line from the scale on the extreme left to the 1927-B curve and then proceed upward to the 50-50 curve and read the desired value at the extreme right as 194. This will be found to agree well with the value read from the direct conversion curve previously given. [8, 39]

Fig. 5 carries two Schopper-Riegler scales both covering 20 deg. C. but one is for 2 grams and the other is for 3 grams, the non-uniform auxiliary scale at the top, constructed from Eq. 40 of table II, eliminating seven additional curves.

Table II presents the equations which enabled construction

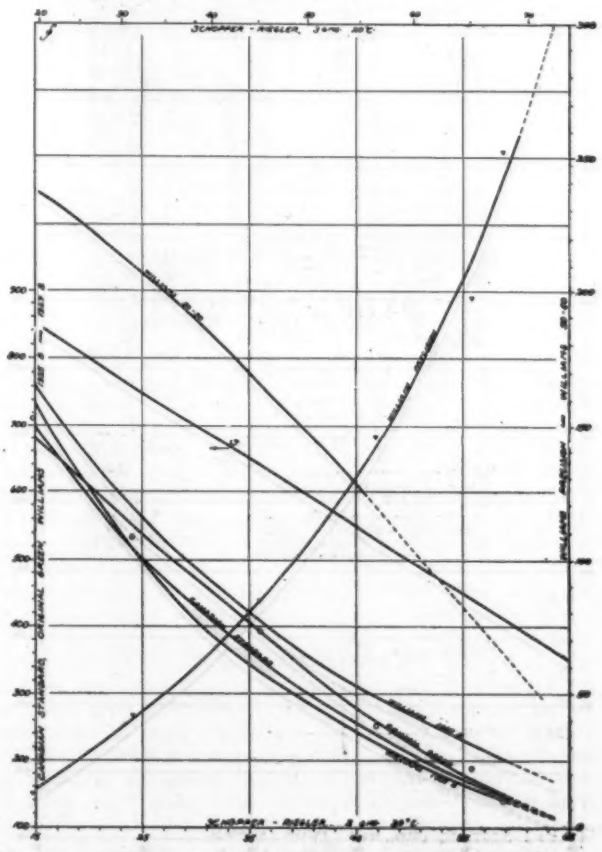

FIG. 5.

of the conversion curves. The forms indicated will be of assistance in conducting extrapolations and will serve as a guide in laying out conversion curves for some specific stock or condition.

Table II

No.	Equation	
1	$P = \frac{62{,}700}{C + 57.4} - 68.5$	
2	$= \frac{182{,}200}{S} - 200.1$	
3	$= \frac{18{,}220}{100 - s} - 200.1$	
4	$= \frac{42{,}500}{{}_{28}F} - 43.2$	($_{28}F > 240$)
5	$= \frac{36{,}940}{{}_{28}F} - 19.9$	($_{28}F < 240$)
6	$= \frac{62{,}700}{{}_{27}F} - 68.5$	
7	$= \frac{1000}{34.55 - 13.70 \log (255.3 - f)} - 43.2$	($f > 127$)
8	$= \frac{1000}{39.80 - 15.78 \log (255.3 - f)} - 19.9$	($f < 127$)
9	$= 717.7 - 252.4 \log (g - 70)$	
10	$C = \frac{1000}{0.01595\ P + 1.093} - 57.4$	
11	$= \frac{1120.4\ S - 156{,}800}{2906 - 2.098\ S}$	
12	$C = \frac{1000\ (100 - s)}{2.098\ s + 80.8} - 57.4$	
13	$= 1.433\ {}_{28}F - 57.4$	($_{28}F < 150$)
14	$= 1.060\ {}_{28}F - 1.4$	($_{28}F$, 150 to 400)
15	$= 0.833\ {}_{28}F + 89.6$	($_{28}F > 400$)
16	$= {}_{27}F - 57.4$	
17	$= 2050 - 836 \log (255.3 - f)$	($f < 71$)
18	$= 1557 - 618 \log (255.3 - f)$	(f, 71 to 187)
19	$= 1315 - 486 \log (255.3 - f)$	($f > 187$)
20	$= \frac{1000}{12.544 - 4.027 \log (g - 70)} - 57.4$	
21	$s = 100 \left(1 - \frac{1}{0.005488\ P + 1.098}\right)$	
22	$= \frac{95.360 - 80.81\ C}{2.098\ C + 1120.4}$	
23	$= \frac{1000 - S}{10}$	
24	$= \frac{23{,}320 - 13.9\ {}_{28}F}{233.2 + 0.861\ {}_{28}F}$	($_{28}F > 240$)
25	$= \frac{20{,}270 - 1.1\ {}_{28}F}{202.7 - 0.989\ {}_{28}F}$	($_{28}F < 240$)
26	$s = \frac{34{,}400 - 27.8\ {}_{27}F}{344 + 0.722\ {}_{27}F}$	
27	$= 100 \left(1 - \frac{1}{5.036 - 1.385 \log (g - 70)}\right)$	
28	$= \frac{68 + 191 \log (255.3 - f)}{35.23 - 11.79 \log (255.3 - f)}$	($f > 127$)
29	$= \frac{506 + 17 \log (255.3 - f)}{44.86 - 15.61 \log (255.3 - f)}$	($f < 127$)
30	$P_{20} = \frac{71{,}300}{C + 57.4} - 78.5$	
31	$= \frac{20{,}710}{100 - s} - 227.9$	
32	$= \frac{71{,}300}{{}_{27}F} - 78.3$	
33	$= \frac{95{,}100}{{}_{27}F_3} - 104$	
34	$= 1{,}137\ P - 0.397$	
35	$P_{4.20} = 1.508\ P - 0.95$	
36	$C = \frac{3062\ {}_{27}F_3 - 229{,}600}{4000 - 1.081\ {}_{27}F_3}$	
37	$= 0.1959\ {}_{27}F_3^{1.281} - 32.4$	(alternative)
38	$C = \frac{1000\ (100 - s_3)}{85.36 + 1.084\ s_3} - 57.4$	
39	$C_4 = {}_{27}F + 361\ e^{-0.0235\ {}_{27}F} - 117.4$	
40	$s_3 = \frac{101.57\ s - 157}{0.349\ s + 65.1}$	

TAPPI Section, Page 128

Summary

Curves and equations are given which represent interconversion of scales for six freeness testers. While applicable in only an approximate manner where stock conditions differ from those mentioned here, the charts and expressions may serve as a starting point in interpreting conversion data under other conditions.

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Acidity of Tub-sized Papers

Acidities of papers made in the Bureau of Standards mill have been determined by both the Kohler-Hall extraction method, and by a method used at the Bureau of Standards in which a suspension of the ground paper is swept free of CO_2 and titrated in the presence of the fibers. The Kohler-Hall method permits determination of the external acidities of the tub-sized papers. In this determination 10 grams of paper in the form of ½ inch squares is boiled for 2 minutes in 250 c.c. of water. The extract is decanted, cooled and titrated with N/100 NaOH. It is presumed that this method of extraction dissolves off merely the surface sizing materials and acids contained in them, leaving the acids in the basic paper undissolved. Thus the internal acidity or the acidity of the basic paper is arrived at by subtracting the external acidity from the total acidity. Hall observed the fact that external acidity is relatively harmless. This is in agreement with work since done at the Bureau. Since the acidity of the basic papers used in the Bureau tub-sizing runs were known it was possible to estimate the accuracy of the above-mentioned method. The following tabulation of results obtained on papers tub-sized with glue containing alum (pH of solution 4.2) indicates that the tub-sized waterleaf has an apparent external acidity considerably lowed than the true value, undoubtedly because of penetration of the glue and alum into the absorbent sheet, and the subsequent difficulty of obtaining complete extraction. On the other hand, in the case of the rosin-sized papers, the glue remains more or less on the surface and as it is much more readily extractable, the test results for external acidity are in good agreement with the true values.

ACIDITIES OF PAPERS TUB-SIZED WITH GLUE AND ALUM (KOHLER-HALL)*

Basic Paper	Total Acidity (Three 1-hour extractions of disintegrated paper)	External Acidity (One 2-minute extraction of ½ inch squares of paper)	Internal Acidity (Total minus external)	Internal Acidity (Actual value, i.e., total acidity of papers before tub-sizing)
Waterleaf	.032	.010	.022	.006
Engine-sized ½ per cent rosin	.046	.012	.034	.031
Engine-sized 1 per cent rosin.	.058	.014	.044	.048

* Expressed in per cent SO_3.

Acidities as determined by the direct titration of fiber suspensions are approximately double those obtained by the Kokler-Hall method.

The former method undoubtedly indicates more accurately the actual titratable acidity, but provides no means for estimating external acidity.

The British Standard Methods of Sheet Making and Testing *

By James d'A. Clark[1]

Several years ago in Great Britain, among the larger paper manufacturers who purchase almost exclusively, the whole of their wood pulp requirements from abroad, a very pressing need was felt to adopt some method of pulp testing which could be standardized and used mutually with the pulp manufacturers to discuss and estimate the quality of pulp being bought and sold. The Technical Section executive committee of the Paper Makers Association took up the matter, formed a pulp evaluation committee, and made a grant of $2500.00 for part payment of expenses to be incurred in examining the various methods in use. If afterwards it was found impossible to adopt any one of them as standard, then the committee was to improvise a method incorporating as far as possible the best points in all the existing methods then known.

The committee was fortunate in securing through the courtesy of Messrs. Cooke and Muttall, Ltd., the services of H. A. Harrison to carry out most of the research work with the active support of the technical organization and the facilities available at Messrs. Bowater's Paper Mills, Ltd., at Northfleet in Kent. England

Arthur Baker, as chairman of the pulp evaluation committee, attempted to secure the co-operation of the American committees and interested parties in Europe. It was fortunate that at that time in America, the Forest Products Laboratory in Canada was being rebuilt and work severely handicapped, and

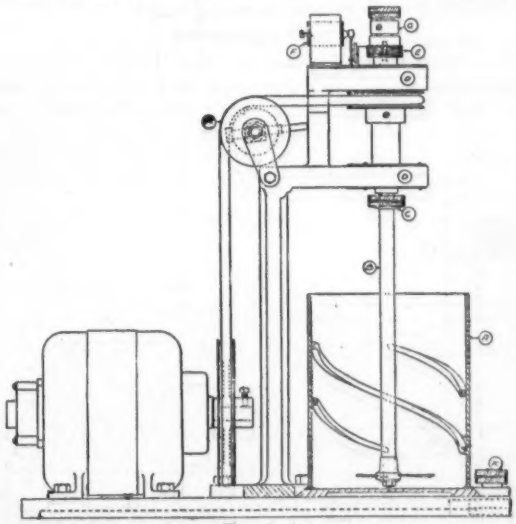


FIG. 1.

that in the United States the committee on pulp testing was somewhat in a state of flux.

With the pressing need in Great Britain of some reliable method being standardized as soon as possible, in view of their almost complete dependence upon the quality of imported pulp, the British committee felt it was necessary to proceed with what measure of co-operation they could secure, and maintain a friendly contact with the various foreign committees and organizations as the work progressed.

It will be recognized that at the outset the committee was untrammelled with undue considerations for any established method, a fact which greatly simplified the task of standardizing a method after it was proved to their satisfaction that no existing method completely fulfilled their requirements of accuracy and practical application. They were at liberty to draw from the literature and communications of numerous methods proposed up to that time, examine them, extract what they considered to be the best points of each and weld them with new

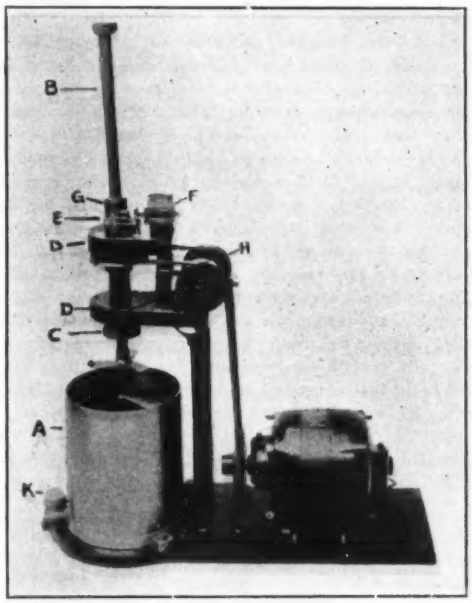


FIG. 2

material, uncovered by their own research work into a homogeneous whole. They were especially indebted for work performed and suggestions made in this country and in Canada, both of which had made great strides in pulp testing after the invention of the first successful sheet machine by W. G. Wilen[2] in 1920. A full account of the British method and of the most important of the numerous experiments leading up to it have been published as a bound volume by the Technical Section of the Paper Makers Association of Great Britain and Ireland under the title of "The Evaluation of Paper Pulp" being the first interim report of the pulp evaluation committee to the section.

Official Adoption by British Association

Since the presentation of the report the apparatus and method described there have been officially adopted by the Paper Makers Association of Great Britain and Ireland as a standard method of sheet making for both the beating and the initial strength tests and as a standard method of making the initial strength test and also freeness tests. Work on the evolution of a satisfactory method of beating pulp before being made into sheets is still in progress. The sheet making methods have been designed to make satisfactory sheets of any pulp however beaten.

* Presented at fall meeting of TAPPI, Erie, Pa., Sept. 3-5, 1930.

[1] Member TAPPI, development engineer, The Mead Corporation, Chillicothe, Ohio.

[2] Pulp and Paper Magazine of Canada 18, No. 47, Nov. 18, 1920.

Sets of apparatus have already been supplied to the following official bodies:

The Paper Makers Association of Great Britain and Ireland
The Norwegian Pulp and Paper Research Laboratory
The Finnish Central Laboratory
The Swedish Tramassekompaniet
The Norwegian Traemassekompani

and in addition to many different mills in the countries mentioned, to mills in seven other countries including the U. S. A. and Canada.

As most people interested in pulp testing will have read and studied the report, it is not proposed to deal with a description of the apparatus and methods but rather to give a brief outline, contrasting them with the present tentative TAPPI and Canadian methods and other methods now in use on this continent.

Difference Between British and American Methods

It would appear that many of the differences between the British and proposed American methods are accounted for by the different angles of approach to the problem. The British method has been designed primarily for accuracy and also, as far as possible, duplication of mill conditions, consequently while much attention has been paid to the ease of manipulation and the time requirements, everything has been subordinated to accuracy so that results may be exactly duplicated by different workers in different countries. Most other methods on the other hand, appear to have been designed with the requirements of routine control testing in mind, and progress has been perhaps unduly hampered by existing methods in operation and the reluctance of users to modify them or give them up. It should be clearly borne in mind that any Standard Method of measurement has different requirements to one for every day use and while cupfuls and spoonfuls are eminently practical methods of measuring certain ingredients, a more definite procedure is necessary for record purposes and for standard measurements. Sizes of individual cups and spoons vary somewhat and for accurate work there is always present the troublesome question of "when is a 'cupful' full?"

A standard method clearly should be characterized by a precise, a definite, and a complete specification so that those who for many good reasons prefer to continue with their existing routine methods are at any time enabled to determine the exact corresponding standard values of their own measurements.

FIG. 4.

Disintegration

The disintegrator is shown in Figs. 1 and 2. Like all the other parts of the equipment each part is accurately made to very close limits and similar parts are interchangeable. At first

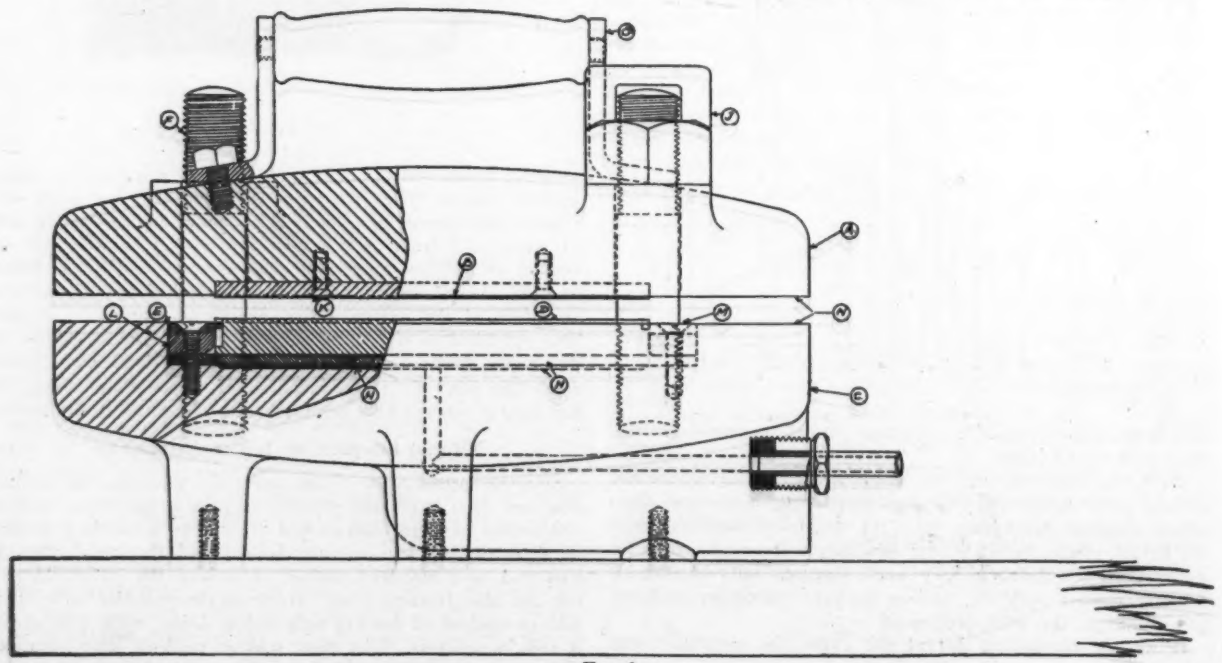


FIG 3.

sight the design appears to be capable of simplification by the provision of a direct coupled motor in place of the belt drive. However, it is impossible to procure motors to run at a specified speed to suit both direct and alternating current and the different periodicities in world use. By providing suitably sized pulleys however, it is possible to insure that the propeller runs at exactly the speed specified (3,000 r.p.m.) when in the stock. Further, by machining deep grooves on the pulley and tightening or loosening the round belt by means of the adjustment provided, minor variations in speed may be adjusted. It has been found that the results in the initial strength test are very nearly directly proportional to the speed of the propeller, and are also very sensitive to slight changes of the design of the propeller, the diameter of the container and the baffling. Each of these items has been rigorously standardized and a gauge is provided for checking the size and setting of the propeller blades in case of accidental damage.

Preliminary disintegration is specified at 75,000 revolutions of the propeller, there being 24 grams of bone dry stock in the container at 1.2 per cent consistency. This is more than sufficient to completely defiber most stocks but in dealing with one or two varieties of certain hard ribbed kraft pulps even this treatment is barely adequate. It seems to be very desirable to treat all pulps alike so that the test figures are directly comparable. Moreover, as it is impossible to disintegrate any pulp without hydration, perhaps it is more logical to accord each stock a definite amount of treatment so that the test figures become of direct practical use in mills where the pulps are made into paper with scarcely any further treatment than slushing. To give a slight treatment as specified in the most recent tentative TAPPI and Canadian methods and then screen the pulp would appear not only to take up a great amount of time, but in the case of a pulp shipment having individual bales of different degrees of cooking, it would result in the resolution of a much greater proportion of the softer pulp than the original sample warranted.

Sheet Machine Design

The round design of sheet machine offers a cheaper and more accurate construction than a square one, Fig. 4. The round sheet, 6¼ inches in diameter (200 sq. cms.) may be conveniently divided for testing, and the round design lends itself more readily to the production of a uniform sheet. The suggestion by Shaw, Bicking and Snyder[3] to provide a large clearance between the wire and the suction outlet, is of considerable

[3] The Preparation of Test Sheets, Paper Trade Journal, April 17, 1930.

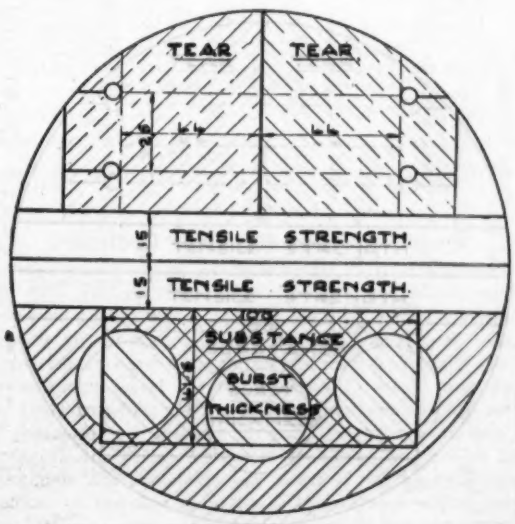


FIG. 6

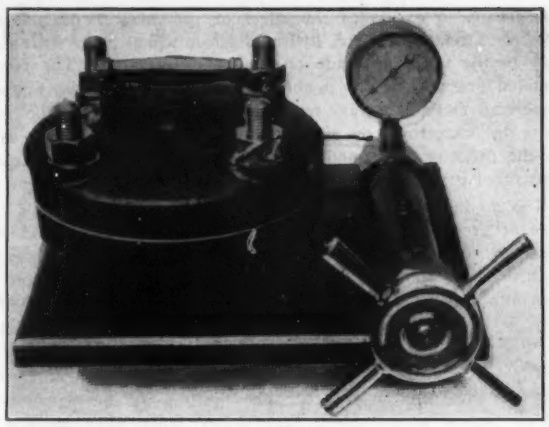


FIG. 5.

merit. A similar result has been obtained by a careful shaping of this space in the British instrument and it has also been found with this sheet machine that the greater the rate of drainage, the more uniform is the sheet.

The stock in the sheet machine is diluted to 0.0172 per cent before being drained. This dilution is very much greater than specified in any other method proposed to date. It is found, though, that as the stock is progressively diluted, the resulting sheets become stronger and more uniform and the felting of the fibers becomes more nearly perfect. The improvements in strength and formation, however, become very much less marked as dilution proceeds beyond this point.

The substance of the test sheets has been selected at 60 grams per square meter (22.2 lbs. 25x40—500), about one sixth of the recommended substance in the tentative TAPPI method for the reason that the average substance of paper in common use is near this figure and no difficulties whatever have been found in the making, couching, or testing of the thinner sheets, even with the weakest pulps in commercial use. A sheet 125 pounds, 25x40—500, not only more approximates the properties of a wad of pulp rather than a sheet of paper, but it would be almost impossible to make such a thick sheet of stock which had been suitably prepared for a greaseproof. It is most desirable to cater for all classes of paper by a single method.

Freeness Measurement

The rate of drainage of the sheet when made under standard conditions, is a very valuable index of its true freeness, that is, its rate of drainage on the paper machine wire. In the British method it is capable of being accurately measured and recorded and the result has been found to be much more in accord with results obtained with different pulps on the paper machine than those obtained by any other method. So much so, that several mills using the apparatus have discarded all their usual freeness instruments in favor of this test. This becomes clear when it is realized that a sulphite beaten to a greaseproof stock—and a fairly coarse groundwood give similar figures when tested by the Schopper-Riegler or Canadian type of instrument, whereas on the sheet machine the drainage of the same groundwood would be about 15 seconds, and the greaseproof stock, about three minutes.

It has been demonstrated by James Strachan[4] that as far as hydration of cellulose by pressure is concerned, a momentary dynamic pressure of 500 to 600 pounds per square inch given to the wet sheet by the press rolls in a paper machine is no more than equivalent to a static pressure of 50 pounds per square inch. Consequently pressures of upwards of 50 pounds per square inch

[4] Proc. Technical Section P. M. A. 1926, Vol. VI 2.

are greatly in excess of the effect of pressures in practice and produce a relatively hard, hydrated sheet which bears little relation to the paper as made on the paper machine. The recommended pressure of 200 pounds per square inch in the tentative American method has no real justification apart from the work done by Cameron[8] on pressure and his results scarcely apply to the procedure outlined in the British method. The press is illustrated in Figs. 3 and 5.

The method of drying specified in the British method is capable of producing very satisfactory results on any kind of pulp, however much beaten. This again is another very desirable feature of a standard method. Moreover, the employment of mirror polished stainless steel discs and drying rings (see Y & Z Fig. 4) causes the sheets to stretch while drying just the same as does paper when dried on a paper machine.

The method of cutting up the round sheets for testing purposes is illustrated in Fig 6. The position of the centre burst in the figure should be a little lower down than shown. It has been found that the nearness of the bursts to each other has no appreciable effect on the results. It is obvious that the number of sheets made can be varied or the sheets may be differently cut up to suit other tests.

Finally it must be noted that users of the sheet machine just described have found some of the existing standard TAPPI. Specifications for physical tests of paper inadequate to meet the degree of precision of the apparatus. For instance, by closely adhering to the TAPPI specification for tensile strength and yet in one case using a small weight on the pendulum of the Schopper tensile testing machine and in the next a large weight, differences of as great as 10.2 per cent have been found on newsprint paper. Obviously the rate of application of stress to the specimen and not the speed of the jaws should be stated. The specification for the Mullen test, too, should be modified, as the sharpness of the edge of the upper clamp, the position and tension of the diaphragm rubber, and the elasticity all have been proved to introduce an appreciable error in results. Similarly there are omissions or a lack of definitiveness in the specified tests for thickness, tear, and some others which leave opportunities for error in excess of those normally occurring with the sheet making apparatus and methods.

The problem of a standard method of beating has so far not been solved. There is a pressing need for some beating apparatus which gives sufficiently accurate results for a precision test. The sheet making methods and equipment just dealt with are ready without modification for making the sheets when a suitable beating apparatus has been evolved. Although practically all the methods in use have been examined, none as yet seem to give sufficiently good results for reference purposes.

A precision beating apparatus may be defined as one which progressively hydrates or bruises the fibers of pulp in contact with water in a perfectly positive and definite manner.

This involves two main conditions.

First, the pulp must be uniformly and positively passed through the bruising mechanism and the action on the pulp must not be dependent on its own friction. For instance, in a rod or ball mill the action is dependent to an appreciable extent on the "slipperiness" of the pulp. A harsh pulp can be made slippery by the addition of a very small amount of alkali and so produce different results in an apparatus dependent on friction for its action, as, for example in the two pieces of beating equipment mentioned. This "slipperiness" is modified in the paper mill by the addition of size, alum and loading material and the design of the beating equipment; so it is clear that it should not if possible be a factor in a laboratory test.

Second, sharp cutting edges should be avoided. The cutting action of any beating apparatus is solely a function of that apparatus and not an attribute of the pulp. Moreover, it is impossible to standardize a sharp cutting edge subjected to progressive dulling.

[8] Canadian Pulp & Paper Magazine Feb. 1, 1923 and Jan. 7, 1926.

It is quite possible that a design of apparatus fulfilling these requirements will one day be forthcoming. The ideal pulp test would then consist of the complete initial strength test and a limited number of tests, including the rate of drainage, made on a few sheets produced from a definite quantity of pulp withdrawn from the beating apparatus at say one quarter and one half beating periods, and finally the entire range of tests made made on the remainder of the stock after beating is completed. The stock when completely beaten preferably should be sufficiently hydrated for making a greaseproof paper.

Manufacturers of every grade of paper when supplied with all these figures would be able to obtain data particularly applicable to their own requirements, by finding out which beating time on the standard apparatus most closely corresponded to their own processing conditions and then interpolating the given figures accordingly.

Summary

An outline is given of the events leading to the adoption of the British standard methods of test sheet making and obtaining the initial strength of pulp. The outstanding differences between these methods and those tentatively suggested by TAPPI and the Canadian Committees are discussed, including disintegration, dilution, pressing, testing of the sheets and their substance. The use of the sheet making equipment for obtaining a precise and more practical freeness reading than apparatus in common use is also commented upon. Requirements of a precision beating apparatus are suggested and also a standard set of tests for a pulp sufficiently complete to indicate its suitability for any class of paper.

Acknowledgements are made to the Mead Corporation for kind permission to publish this paper.

Box Board Production for July

WASHINGTON, D. C., September 15, 1930.—July production of box board, based on reports to the Department of Commerce by 97 firms operating 130 plants, was 66.8 per cent of capacity, as compared with 69.4 per cent in June, 73.3 per cent in July, 1929, and 73.1 per cent in July, 1928. The capacity data shown below vary according to the normal number of working days in each month:

Year and Month 1930	Operation: Inch hours Capacity	Operation: Inch hours Operated	Operation: Per cent of Capacity	Production: Short Tons Capacity	Production: Short Tons Output	Production: Per cent of Capacity	New Orders	Unfilled Orders (end of month)
							Short Tons	
Jan.	11,691,264	8,772,273	75.0	329,628	236,344	71.7	244,536	69,940
Feb.	10,888,704	8,971,760	82.4	306,432	221,014	72.1	213,251	62,134
March	11,796,096	8,643,344	73.3	331,968	229,979	69.3	226,770	58,591
April	11,796,096	8,580,845	72.7	331,968	245,167	73.9	249,848	66,868
May	11,796,096	8,377,741	71.5	331,968	240,186	72.4	234,405	63,237
June	11,342,400	7,841,532	69.1	319,200	221,525	69.4	221,526	58,866
July	11,796,096	7,956,134	67.4	331,968	221,696	66.8	216,391	66,562
Total (7 mo.)	81,106,752	59,143,629	73.1	2,283,132	1,615,911	70.8	1,606,727	....
	Corresponding Month of Previous Years							
July, 1928	10,474,300	7,992,170	76.3	275,100	201,153	73.1	209,976	79,492
July, 1929	12,188,644	9,227,606	75.7	333,424	244,318	73.3	244,510	76,091
	Totals for Previous 7 Month Periods							
1928	74,793,188	58,051,097	77.6	1,965,766	1,536,360	78.2	538,230	.....
1929	83,870,926	65,229,202	77.8	2,293,146	1,754,716	76.5	1,726,114	.....

Huge Sacandaga Reservoir Dedicated

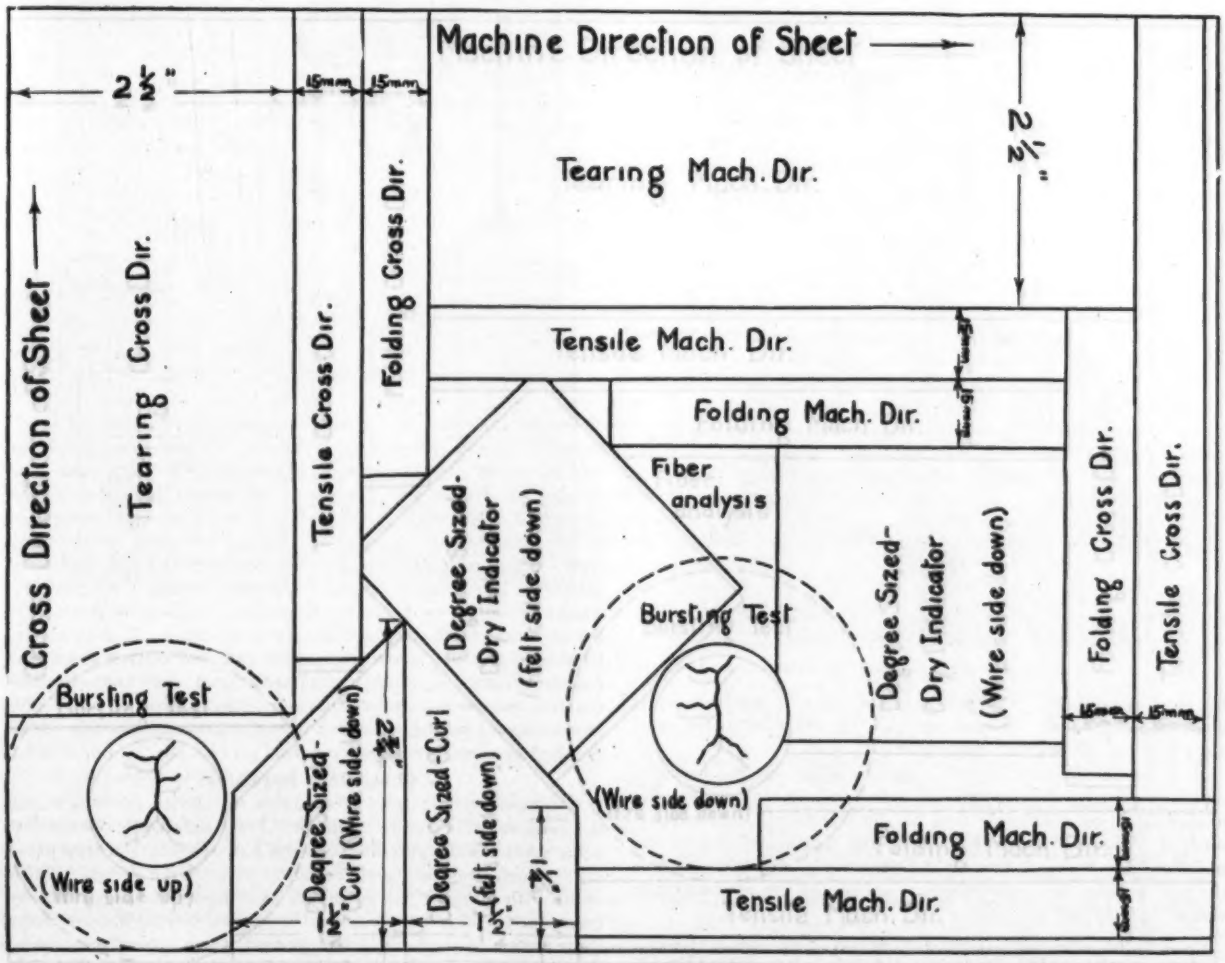
CONKLINGVILLE, N. Y., September 13, 1930.—The dedication of the huge Sacandaga Reservoir was conducted this week under elaborate ceremonies with the principal address being delivered by Governor Roosevelt. The project was financed by prominent Northern New York paper concerns and represents the culmination of many years of effort to provide larger power development on the streams in the Hudson River. In past years paper mills and other industries along the Hudson have frequently been forced to suspend operations at certain periods of drought but the regulation of the reservoir has eliminated this condition by assuring a flow in the river at all times sufficient to enable the continuous running of power plants. The new reservoir covers forty-two square miles.

The Directional Designation in the Physical Tests of Paper*

By F. T. Carson[1] and L. W. Snyder[1]

The accompanying diagram serves the twofold purpose of indicating (a) how the specimens for physical tests should be cut with respect to the machine direction of the sheet in order to conform to the procedures prescribed in the Official Methods of the Technical Association of the Pulp and Paper Industry, and (b) how one may obtain a maximum of tests from a limited sample. The diagram shows how one might obtain sufficient specimens for all the usual physical tests from a sample consist- are so arranged that the clamping pressure does not fall on any area subject to rupture in some other test. The narrow strips for tensile and folding are not cut from the very edge, which is sometimes stained, scuffed, or otherwise injured.

Paper being a structure of interlaced fibers depends for its strength in either direction upon the predominance of fibers in that direction. The strength properties are therefore in general greater in the machine direction than in the cross direction. In regard to all tests except the tearing test there is unanimity of opinion concerning the directional designation of the test specimen. But in the case of the tearing test there is considerable confusion. As a matter of fact it appears that the designation just opposite to that of the Official Method[2] is very prevalent in the paper industry. Precisely just what is one to understand by the statement that the tearing resistance or tearing strength of a given paper in the machine direction is 50 grams? Some would understand that an average force of 50 grams is required to split the paper along its machine direction. The rest of us would understand that in testing the paper the specimen had been cut as indicated in the accompanying diagram and that the stress had been applied in such a manner as to rupture the machine direction fibers and that consequently an average force of 50 grams is required to split the paper in its cross direction, just as in all the other strength tests the line of rupture is understood to extend at right angles to the direction tested.



* A report submitted to the Chairman of the Paper Testing Committee, TAPPI

[1] Bureau of Standards, Washington, D. C.

[2] Paper Testing Methods, by Committee on Paper Testing, TAPPI, page 45. Machine Direction, Section 2—IV.

The latter point of view appears to be the logically correct one. It is necessarily true that the line of rupture must extend across the fibers which are being tested. The significance of a strength test of a material is in evaluating the resistance which the material offers to rupture. The strength of paper in the machine direction must logically characterize the resistance to rupture offered by the material (fibers) lying along this direction. It would seem illogical to speak of the machine direction tearing strength when tearing the paper so as to rupture the cross direction fibers.

In brief, the directional designation prescribed in the Official Method for tearing resistance, but which is at variance with widespread practice in the paper industry, appears logically correct for the following reasons:

(1) The direction designated as that tested is the direction of the fibers which resist the rupturing force.

(2) It is in conformity with the commonplace that paper is stronger in the machine direction than in the cross direction.

(3) It permits uniformity of definition in that it prescribes for all the strength tests that it shall be understood that the line of rupture is at right angles to the direction designated as the one tested.

Automatic Consistency Control in the Paper Mill *

By Sidney E. Meyers [1]

One of the most potent causes of uncertainty in paper mill stuff prepartion, as well as of weight variation in the finished sheet, is non-uniform consistency or density. This has a definite value defined by the amount of suspension of solids in liquids and is usually evaluated in terms of per cent solids by weight which they bear to the total weight of the volume under consideration. Thus we are dealing with a mobile material which is fundamentally a liquid but which, as the degree of suspension increases,

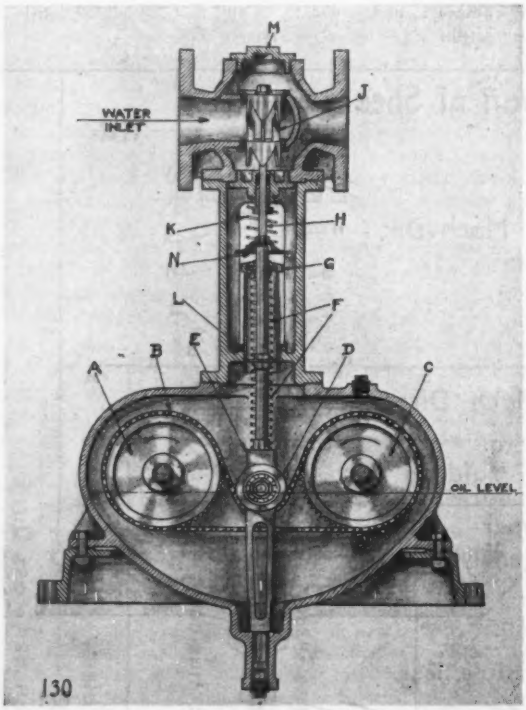


FIG. 2.

becomes increasingly non-liquid as a condition of semi-solidity is approached. The dry, finished sheet can be regarded as the truly solid form of the original suspension.

It is not the purpose of this paper to bring out the necessity of providing constant densities for pulps or half-stuff undergoing quantitative and qualitative tests in the laboratory; this requirement is recognized and well known. But technical directors and operators are both recognizing the necessity of the same care in the mill, because the requirements of uniformity are fundamentally similar in mill and laboratory.

Non-uniform density of paper making slurries at any point in the process reflects itself in many ways. The increasing use of slush stock for charging beaters requires uniform consistency of incoming stock if beating control and accurate cost accounting of raw materials are to be accomplished. Uniformity of fiber length and degree of hydration as reflected in freeness are at the mercy

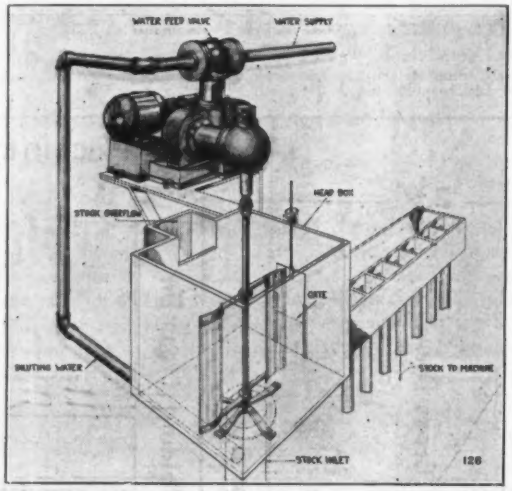


FIG. 1.

of density variations in beaters and jordans, particularly the latter because jordan action can not be hurried, delayed nor adjusted to suit the needs of the moment. Everything else being equal, the jordan will deliver slower stock as the density is increased, and vice versa. Screening operations of all sorts are very susceptible in effectiveness and capacity to density variations in incoming stuff. This applies to chemical and mechanical pulps, and to a somewhat lesser degree to paper machine screens. Uniformity of weight or caliper on paper machines can be closely maintained if the stock at closely constant density is provided. It goes almost without saying that a stationary stuff gate will deliver a constant weight of stock if uniform hydraulic head over the gate and constant consistency are maintained. This is true of any liquid or semi-liquid having constant internal friction or viscosity, as it is called by some investigators.

Consistency Regulation

A consistency regulator is an automatic device for controlling the proportion of solids to liquid. They invariably operate by being mechanically responsive to the flow-resistance of stuff passing through them or by the rotation of a driven member which meets with more or less resistance as it passes through relatively quiet stock. With but one known exception, they all operate under some system of mechanical arrangement which acts in response to density-resistance. Some of them have the objection that they

* Read by title at the fall meeting of TAPPI, Erie, Pa., Sept. 3-5, 1930.

[1] Assoc. member TAPPI, development engineer, Merritt Engineering and Sales Co., Inc., Lockport, N. Y.

are influenced by stock velocity variations and, as such, are at the mercy of a common occurrence which has nothing to do with absolute density. The consistency responsive element of the regulator serves to operate a valve which admits water into the stock in amounts necessary to maintain consistency within the limits of sensitiveness inherent in the device.

It is desired in this paper to submit a brief description of a new and thoroughly tested device[2] which has been developed and designed by the writer in conjunction with his associates, the Merritt Engineering & Sales Company, Inc., of Lockport, New York.

This device is of the type which obtains its regulating impulse from an agitator revolving at constant speed within the stuff to be regulated. The body of the machine is placed upon suitable supporting members at the top of the stuff box and the agitator is suspended from the driving mechanism, the agitator shaft being guided by a bearing at its lower end. A typical arrangement of the device in position is shown by Fig. 1.

A cross-sectional view through the body of the machine is shown in detail by Fig. 2. The left-hand sprocket is driven counter-clockwise by a one half horse power motor through a worm gear. The chain transmits this rotation to the right-hand sprocket which is geared to the vertical agitator shaft, not shown. The power transmitting chain thus has its tight or driving strand uppermost and supports a floating member by means of a roller carried by the floating member which is vertically movable under the limitation and control of an adjustable spring. The vertical movement of the floating member is transmitted directly to the balanced V-port water valve above the main housing.

The agitator is always fully submerged within the stuff so that erratic rotational resistances will not occur due to varying depths of stock being attacked by the agitator. As the stock becomes heavier or lighter, the work required to drive the agitator is increased or decreased, and is instantaneously reflected in the tension of the chain under the roller. An increase in consistency tightens the chain and elevates the floating member which directly operates to raise the water valve to a position depending upon the density of the stock. The amount of such valve movement is limited by the adjustable spring which is compressed under increasing densities. It will be seen, therefore, that the device is dynamometric in action and that spring effort is always in opposition to and in equilibrium with agitator resistance. The slightest decrease in resistance is immediately compensated for by depression of the floating member and water valve closure under the influence of the spring.

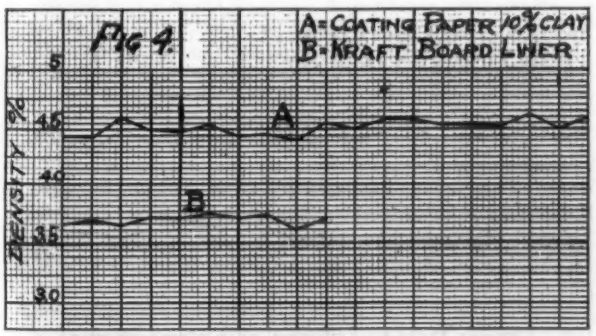


Fig. 4

The adjustable feature of the spring is accomplished by placing more or less initial compression upon it by means of the hollow nut which houses it. Increased compression sets up more resistance to valve displacement thus admitting less water to the stock. An opposite adjustment has an opposite effect, viz., the stock will be maintained at a lower density.

[2] Patents applied for in the United States and foreign countries.

Motor speed variations due to non-uniform frequency, and non-uniform diluting water pressures, are automatically compensated for because of the inherent tendency to maintain equilibrium between the spring and agitator resistance. Lowered water pressure compensates for itself by increased stock density and consequent further opening of the valve; lowered rotative speed tends to close the valve which increases density and returns the valve to its former opening. These facts are true within the limits normally found in plants which maintain resonably constant electrical frequencies and water pressures. Where water pressure varies excessively, as found in some plants, the use of a float controlled water head box is recommended.

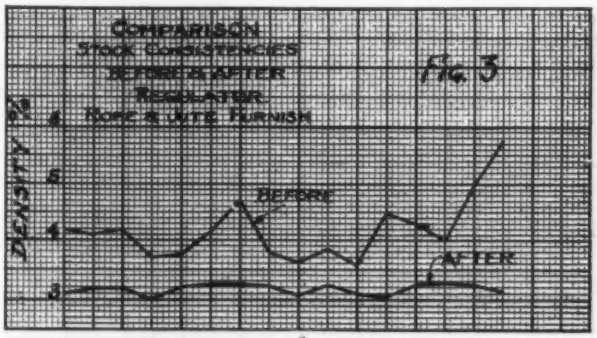


Fig. 3

Application of Regulator

Eighteen months of intensive and exhaustive tests under plant conditions, have made it necessary to dictate, to some extent, the preferred arrangement of installation, size of agitator compartment and direction of flow through the stuff box. The machine is designed to handle all of the stock in transit, thus avoiding the necessity of sampling or by-passing a portion of stock for regulator purposes which may or may not be a true cross-section of the main bulk.

There are two-fundamentals governing the most successful use of this device. First, all of the stock should pass vertically from the bottom to top of the agitator compartment. This is, in fact, imperative where overflow volume may be small or entirely absent as is so often found in mills producing more than their designed rating. Second, the horizontal cross-sectional area of the box which governs the vertical velocity of the stock must be so proportioned as to limit such velocity to about ten feet per minute. It may be less than this, but not more. Under ideal conditions the stock should be stationary, but as control under continuous flow is sought, limited velocities which avoid eddying, geysering and wild currents leading to erratic agitator resistance must be avoided. A convenient rational expression from which the area of the box may be conveniently computed is given herewith:

$$L = \sqrt{\frac{W}{c \times 2.5}}$$

In which L = length of side of square box in inches.

W = total dry weight of stock passing per hour.

c = density of stock in per cent solids (whole number).

The omission of the radical will give the area of the box in square inches from which the dimensions of a box of any shape may be computed. A square box is always recommended, however.

Where regulation is carried out at the paper machine stuff box for purposes of weight or caliper control, it is quite necessary to place the stuff gate at the bottom of an auxiliary chamber in which the full depth of stock within the box is maintained. This arrangement applies to any machine stuff box because normal head

variations and fluctuations in flow due to pump variables are greatly minimized. Stuff being skimmed from the top of a box is bound to be far less uniform in volume and consequent sheet weight than the steady, vigorous and healthy flow from a gate operating under a reasonable head preferably not less than twenty-four inches. A variation in head of one inch from a 24 inch level will result in about a 2 per cent fluctuation in sheet weight. The same variation with a 12 inch head will result in over 4 per cent variation. With a top gate arrangement, flow may vary from almost zero to maximum at each revolution of the pump. Certainly, a one inch variation with such an arrangement is serious indeed. The newer centrifugal and rotary pumps have done considerable to obviate this condition and should receive serious thought when new pumping equipment is contemplated.

Consistency Control and Basis Weight

Many observations carried out with consistency control as the sole automatic method of maintaining sheet weights or caliper have shown generally that for every .1 per cent density variation, one per cent weight variation may be expected in the finished sheet. Thus it can be seen that a combination of non-uniform density and uncertain hydraulic head is indeed responsible for many troubles not chargeable to the paper machine itself.

The adaptability of this regulator has been thoroughly established by its successful operation on stocks from the coarsest to the finest. Almost all of the intermediate grades of stock for paper or board between the superlatively fine pure linen condenser papers to saw mill waste for heavy wall boards are being accurately and reliably controlled. The great majority of these devices are located just ahead of the jordan or other refining engine showing that an increasing interest is being shown in the advantages of prerefiner regulation and consequent fiber uniformity with improved weight control.

Where water dilution of stock is used for regulation, it is necessary that the approaching stuff always be heavier than that for which the regulator is set. Stock below the set value cannot be regulated and the device becomes inoperative With this in mind, the designers of this device have provided a system of signal lamps which are placed within convenient sight of the operators preparing the stock. The lamps give instant and unquestionable indication of the position of the ports in the water valve which positions itself in accordance with the density of the approaching stuff. A red signal indicates stock too light for regulation; white shows stock approaching at the consistency for which the machine is set and denotes that the valve is just at the opening point; blue indicates an open valve with regulating water passing to the stuff. Therefore a blue signal should always be kept in sight. In several instances peculiar behavior of the signal lights have given early warning of hidden or unknown happenings which would not have been detected until delays or shut-downs had actually occurred. But their normal function is primarily to insure supplying stuff sufficiently heavy to maintain regulation at all times.

A very good idea of the accuracy of this device may be gained from Figs. 3 and 4 which are titled to show the grade of stock upon which the tests were made. Fig. 3 shows tests made immediately before and after the regulator on jute stock which is indeed a difficult stock to control and behaves similarly to rope. All of these results were obtained from the laboratory of the mill in which the regulators were installed.

Consistency Measurement

A few words relative to the method of determining consistency are relevant to the subject of consistency control. There is apparently much confusion and lack of a standard method of carrying out such determinations. Suffice it to say that single spot samples of any size suitable for laboratory manipulation cannot be accepted as accurate. This is particularly true of those fibers which are very free and especially those of reed or grass origin. Stocks carrying clay or other loading materials are also relatively difficult of accurate sampling. In the development of a device of this sort, one naturally is obliged to study and arrive at the most accurate method of obtaining consistency samples.

It has been found best to obtain a fairly large bulk sample, not less than two pounds weight, from a freely falling stream of stock. An ideal place is just beyond the crest of an overflow board in a stuff box. The bulk sample should be obtained in a wide-mouthed vessel and be passed from one side of the flow to the other at such a speed as to just about fill during the transit. The sample should be thoroughly stirred while extracting the laboratory sample for final weight determinations. At least two samples for drying should be simultaneously prepared from the bulk sample, and more if possible. Some laboratories fill a 100 or 200 cc. container level full and accept the weight as being one gram for each cc. Others insist upon actually weighing out the wet sample, which is probably the more accurate method. From this point, procedure is fairly well established and no reason for further inaccuracies are apparent if care is exercised. It will be found that invariably the two or more final samples will not agree. Sometimes they do, and more often they are very close to each other, but 25 or 30 per cent of them will give results 2 to 4 tenths of a per cent or more apart. The final and accepted single results should be the average of the two or more final samples.

In concluding this paper, it may be well brought out that manual control, if it is at all possible, is expensive when reliably automatic control is economically available. Automatic control is certain and accurate, and makes itself felt throughout the process in ways too numerous to mention. Surely, its availability coupled with high class design, workmanship and materials makes it worthy of the consideration of plant technicians, executives and operators.

Effect of Starch on Stability of Papers

Various chemical tests on papers tub-sized with starch, made from highly-purified wood fibers in the bureau paper mill have been completed. These tests included the alpha cellulose content, copper number, and acidity by the Kohler-Hall method and by the direct titration of a fiber suspension. Amounts of various sizing materials present were also determined. As with the glue-sized papers previously reported on, the effect of heating on the alpha cellulose content and copper number was determined.

The papers included a waterleaf and two rosin-sized papers (containing ½ and 1 per cent rosin respectively) tub-sized with a 4 per cent starch solution containing no alum (pH 7.35), and one containing 2 per cent alum based on the weight of starch (pH 5.43). The test results are all similar to those obtained with the glue-sized papers. Here, too, external acidity (that contained in the starch size) appears to be without detriment to the stability as determined by changes in the alpha cellulose content and copper number on heating. Starch sizing apparently exerted a protective effect upon the paper similar to, but slightly less than that of glue sizing.

Paper-Making Quality of Cotton Waste

Considerable quantities of cotton waste from textile manufacturing operations are available, for which there is very little outlet at present. At the request of a manufacturer interested in finding an additional market for this material, tests of its paper-making quality were made on a semi-commercial scale. The material contained considerable oil and was very dirty. The manufacturer stated that the oil could be removed at the plant. In the paper-making process, the use of considerable alkali in the cooking operation was found necessary for removal of the oil. Otherwise no difficulty was experienced in making a high-grade writing paper, except that the paper was excessively dirty. The manufacturer stated that the oil could be eliminated. As to whether the material could be cleansed sufficiently for fine papers is problematic, however, and it apparently would be too expensive for use in coarse paper products.

Section of the

COST DEPARTMENT

of the

American Paper and Pulp Association

Edited by T. J. Burke C. A. Director Cost Dept.

Investigating and Analyzing Distribution

By L. G. Cattermole[1]

In the old days before the "increased tempo in modern business," "the new competition" and "profitless prosperity" the sales department was largely left to its own devices in securing orders. Enthusiastic "pep" conventions, high-pressure salesmanship, fearful and wonderful advertisements all played their part in the scheme of things. The responsibility for getting sales was put squarely up to the sales manager and his organization.

Salesmen were given certain territories with carte blanche to make them productive. If they attained a volume of sales which equalled or bettered previous records in the same territories, or which, in the superficial judgment of the sales manager or other executives, was considered reasonable, these salesmen were generally lauded and honored, and held up as an example to the cub salesman and the poor producers. On the other hand, if they failed to produce, according to the above standards, a new face was shortly seen in the purchasing agents' waiting rooms of the firm's prospects and customers.

Each salesman was often a little czar in his own territory. As sales to various prospects were often based on a policy of expediency, deference was made to the salesman's judgment as to which prospects should or should not be sold.

The commission form of compensation led to a striving for volume of sales, rather than for profitability of sales and territory Not infrequently the salesman would split his commission with the customer (especially if a large buyer), with the thought that a small commission was better than none.

How this has changed in the last few years!

A new form of management—virile, vigorous and vital—sits at the helm of the more progressive sales organizations today, and with it has come a new conception of the duties, the obligations and responsibilities of sales management. This new management has been called scientific, somewhat after the fashion of the type of management which has proved so effective in making the production divisions of manufacturing so effective. But, in a manner of speaking, it has become more than scientific, it has been tempered with sound business judgment and it has also become humanized. Not the "hail-fellow-well-met" form of humanization, but the type which studies and understands the handicaps which deter the salesman from attaining the expected profitable results in a given territory, and which develops plans and methods for overcoming barriers and sales resistances.

The new policy which has been adopted is that the management shall plan the sales program and the salesman shall execute it. This places the responsibility up to the management for the successful accomplishment of reasonable and profitable results. On this basis, then, the success or failure of the various salesmen is largely dependent upon the management and its policies and methods. Inasmuch as the adoption of a sound and practical program is dependent upon a thorough knowledge of all facts relative to the product and market, and the best means of bringing them together, it is necessary that all essential data shall be collected and analyzed, so that the sales procedure will be based on carefully determined facts.

Because all this information must be collected and collated by the management, the old time need for the salesman's deciding questions of policy or procedure has been largely eliminated. This is as it should be, due to the fact that the management has much wider sources of information and a much broader perspective than any individual salesman. The problems of procedure are too many and varied, and too complex to be settled on the basis of expediency or the opinion of any one man.

This means that correct methods are established solely on the basis of all facts that can be gathered and analyzed, and this new or revised procedure is established as standard practice for the salesmen, leaving the salesman free to deal with unforeseen and individual problems as they may arise in the normal course of events. This means also, that close and constant contact must be maintained with the salesmen to assist them in settling questions of policy or procedure which may not have been predictable, to watch their progress and to offer constructive help and suggestions in building up their territories.

Someone has said that a market is like a sponge which absorbs the output of a business. It therefore is essential to understand how rapidly this sponge will absorb before it is possible to intelligently deal with it. However, unless the business man is willing to apply the principles of this new form of sales management to his marketing problems, it is almost certain that the business which he formerly enjoyed will be lost to his competitors who see the advantages of the more progressive marketing analysis and management methods, and utilize them.

Many businesses, therefore, would do well to consider the advantages of having a careful survey made of their entire sales problem. Such a survey should be made by a well qualified man or organization, with analytical, sales and broad business experience and training as a background. This survey likewise should serve as a foundation for the determination of general and specific sales policies, and occasionally will point the way toward improved manufacturing, financial or general management plans, the net result of which will be a more strongly fortified position and increased profits. And in the final analysis, increased profits, legitimately attained, are the goal of most manufacturers today.

A sales or market survey should be comprehensive in scope, covering all phases of the marketing problem, so that present conditions and future possibilities may be seen in their true

[1] Management Counsel, Cooley & Marvin, Boston, Mass.

perspective, and so that recommendations relative to improved methods may be promptly put into effect.

An outline of the varied subjects relating to sales which should generally be studied, and co-related into a complete program, is as follows:

OUTLINE OF SALES INVESTIGATION

1. GENERAL
   - A. The Company and Its Progress
   - B. Competitors
   - C. The Industry—Its Background and Future Prospects
   - D. Business in General
2. PRODUCT
   - A. Past, Present and Future Possibilities
   - B. Competitive and Substitute Products
   - C. Prices, Discounts and General Price Policies
   - D. Analysis of Profit on Each Line, Group or Item
   - E. Design or Style
   - F. Appearance, Packaging, Samples
   - G. Quantities Sold of Each Line, Group or Item
   - H. Average Units of Sales
   - I. Present Uses of Product
   - J. Possible New Uses or Applications
   - K. Products which might Profitably be Dropped
   - L. Other Products—Supplementary or Supplantive—which might Profitably be Manufactured and Sold
3. MARKET
   - A. Who the Market Comprises
   - B. Where the most Profitable Market Exists
   - C. When the Goods should be Sold
   - D. Analysis of Profitability of various Customers, Groups, Classes or Geographical Markets
   - E. Potential Markets
4. BRINGING PRODUCT AND MARKET TOGETHER
   - A. DISTRIBUTION
     1. Methods and Channels
        - a. Branches or District Offices
        - b. Agents or Commission Men
        - c. Jobbers
        - d. Wholesaler
        - e. Retailer
        - f. Direct to Consumer
        - g. Other Channels
     2. Precluding Possible or Actual Conflict in Methods or Channels of Distribution
     3. Exclusive Representation, Selective Distribution, or General Distribution
     4. Cost of Distribution
     5. Service
        - a. Prior to Sale
        - b. Prior to Delivery
        - c. After Delivery
     6. Volume of Distribution
        Its Effect on Costs of Distribution and Production
     7. Credits
        - a. Their Effect on Sales
        - b. Their Effect on Profits
     8. Financing Sales and Distribution
   - B. SELLING
     1. Organization
        - a. Office
          1. Executive
          2. Statistical
          3. Routine
        - b. Field
          1. Securing Salesmen
          2. Training Salesmen
             - a. Personal Training
             - b. Class Training
             - c. Other Methods
          3. Territorial Assignment of Salesmen and their Quotas
          4. Direction or Control of Salesmen
          5. Methods of Compensation for Salesmen
   - C. ADVERTISING
     1. Direct Mail—Circulars, Catalogs, Booklets, House Organs
     2. Periodicals
     3. Displays—Store, Window and Other
     4. Demonstrations
     5. Dealer Helps
     6. Miscellaneous
5. RECOMMENDATIONS AND DEVELOPMENT PROGRAM COVERING INCREASED AND MORE PROFITABLE SALES

General

In intelligently studying the problem of marketing, it is essential to know something of the company and its progress, if possible from the time of its inception. A careful analysis of its history and growth; how its markets have developed and expanded; a study of the organization and its past and present progressiveness and acceptance of betterment methods; the success or failure of previous products; the financial condition and history of the company; the capacity and ability of the various divisions of the business and members of the organization; and the location and condition of the plant all contribute materially toward the development of effective sales policies.

It is understood that too much emphasis must not be placed upon what has gone before in the history of the business, excepting as it may help or hinder the development of future sales plans. An understanding of how its markets have developed and expanded is indicative, to an appreciable extent, of its vision and ability to grasp its opportunities.

The personnel of the organization and their emphasis on certain phases of the company's activities indicates which branches may need strengthening, or what steps may be taken to bolster up an otherwise weak condition. There may be a tendency on the part of certain major executives to be more interested or more capable in certain division of the business than in others. For instance, one organization whose chief executive had a wide and successful merchandising experience, was constantly attempting *to manufacture and sell every type and kind of sulphite wrapping paper and tissue, regardless of the fact that the mill could not profitably manufacture over fifty per cent of the lines which were offered to their customers.* A study of the capacity and facilities of the plant, and the profitability of the various grades manufactured, caused the entire sales effort to be concentrated on fewer grades which could be manufactured at a profit. The result was a decided improvement in the company's position.

Another concern, whose chief executive had been trained in the engineering department, was manufacturing many unrelated products, auto accessories, children's vehicles, radio parts and advertising novelties. Many, in fact over ninety percent of the articles were highly meritorious, but they were too diversified to be distributed effectively. A study of the conditions existing and the possibilities in the manufacture and sale of all the above commodities enabled this concern to concentrate on one line entirely, the one line which they were best equipped to manufacture and sell, with minor changes in their organization and equipment. As a result, this company has progressed from a mediocre organization to an outstanding success in its chosen field within a period of less than five years.

It was found, in the study of the development and expansion of the markets of a concern manufacturing post office equipment, school and laboratory equipment and toilet seats, that the toilet seat business offered greater opportunities for future development and profits, despite the fact that the sales on this line had diminished almost to the vanishing point.

The ability of the organization to accept and adopt methods which may be a radical departure from previous methods plays a very important part in the development of its future program and policies. For example, it was necessary to lay out very conservative development plans for one concern, which had infinite possibilities in the manufacture and sale of a new commodity for which there was a large potential consumer demand and which under a more progressive management could have more immediately taken advantage of these potentialities. On the other hand, a very progressive book publishing concern was able, through the adoption of what was considered a revolutionary sales policy, to make an astounding success of its business in a very short time, simply because of the open-minded attitude of the executives.

Other Factors in the Conduct of the Business

The financial condition of the concern must be given more than passing consideration. Costs of the products, broken down into labor, material and factory expense, as well as administration and selling expense should all be analyzed for the various items manufactured, and the profit on each determined. The profit position of the company, and the trend of profits all assist in the determination of future policies. The available working capital or surplus often determines whether immediate results may be accomplished by putting a complete plan of procedure into effect, or whether results must be accomplished more slowly by paying for the developments out of future profits.

The location and condition of the plant and various other factors play a very important part in the development of improved sales plans and marketing methods.

The competition which must be faced, both in the same lines or in lines which are intended to supplant the existing lines,

must be carefully investigated, together with the types and kinds of organizations which are manufacturing and selling these competitive products. Competitive prices, quality, lines of goods, advertising, service, distributing methods, process of manufacture, and location and size of competitors should be studied to determine the handicaps which are being or must be faced, and whether or not these handicaps may be overcome.

A factual study of the industry and business in general may influence the development program to a very appreciable extent.

Product

Any manufacturing concern, to be consistently successful, must devote a large part of its attention to the product which it manufactures or proposes to manufacture. Every division of the business centers its activities around the product, and exists only for the purpose of serving the product.

A knowledge of the past history and present status of the product, as well as its future possibilities serves as the background for a more complete and detailed study of it.

Examination of competitive products often indicates improvements that may be made in the existing product, or suggests lines of investigation that should prove helpful in developing improvements, without in any manner "pirating" competitors' ideas. In many cases, suggested changes brought about through the careful study of the product and the uses to which it is put, have resulted in rehabilitating the entire organization and re-establishing it on a profitable basis. For example, a manufacturer of office appliances was shown where a slight change in his product would open up a new and hitherto almost untapped market. Needless to say his concern is "sitting pretty" at the present time.

In today's rapid march of events it is difficult and often impossible to tell what sort of substitute or supplantive products are likely to appear on the market. It is often possible to measure the trend away from a product by analysis of sales of the product and a study of competitive attempts, which are intended to supplant it. Of course, the laboratories today are working in the years 1935, 1940 and even 1950. It is seldom, however, that new products intended to supplant old ones attain instant popularity. Consequently an understanding of competitive forces and trends enable a manufacturer to chart his course with a reasonable degree of accuracy. But he must have facts on which to base his judgment—as many comprehensive facts as it is possible to obtain.

Prices

In a buyers' market, the price problem is generally of paramount importance. Yet, how infrequently do manufacturers fail to collect and collate all information relative to the price situation. A large manufacturer of lighting fixtures had been told by his salesmen that the market for his fixtures was rapidly being lost because of the fact that people would not pay $20.00 to $25.00 for his wall brackets and $50.00 to $100.00 for his ceiling lights and chandeliers, as they did a few years ago. When he was shown, however, that 98 per cent of the brackets, of the same general class which he manufactured, sold for less than $12.00 and 95 per cent of the ceiling lights and chandeliers for less than $35.00, and that the market for higher priced fixtures generally called for specially designed and manufactured items, he changed his policy to accord with the price trend.

Of course a manufacturer's prices must be low enough so they will not curtail sales, and high enough so they will not curtail profits. If a price which is high enough to yield only a reasonable profit is so high that it curtails sales, then all elements entering into the manufacture and cost of that article must be carefully analyzed for the purpose of bringing down the cost and consequent selling price. If this cannot be done it is generally safe to assume that the item should be dropped from the line.

Prices on special articles which must often be sold to the customers' individual requirements sometimes present problems which must be carefully studied to determine a satisfactory procedure. Such prices are generally determined by two principal factors, cost of the goods and competitors' prices. Very often competitors' prices are so low that it seems impossible for the manufacturer to sell his goods at a price which will yield a profit. If the goods cannot be sold at a higher price on the basis of added quality not incorporated in his competitors' products, then improved manufacturing facilities or methods, or changes in the method of distribution may enable the manufacturer to enjoy a profit. One class of special commodities generally sold at a loss by the manufacturer's salesmen, through the architects, was later distributed through loyal dealers who had been educated at a reasonable cost to sell this class of goods. The cost of selling—previously very high because of the individual attention required for the sale of each job—was reduced through this plan to such an extent that this manufacturer gets eighty to ninety percent of the contract on which he bids, and best of all is making profits which his competitors envy.

The problem of discounts is one that is generally determined by custom and tradition, altho so-called confidential discounts are often offered, even by some of the largest houses as an inducement for the buyers to trade with them. Many times sufficient study is not given to the problem of the distributor—the "middleman"—and his relation to the question of discounts. Due to the fact that competition governs prices to the middlemen or distributors much more than to the consumers, it is necessary to outline a sane policy which can be followed. It may be truthfully stated that a better knowledge of the laws of economics on the part of chief executive and sales manager would in many cases be the means of helping to solve the price problem. There is a healthy growing tendency on the part of many business men to study and understand the science of economics and the laws governing business. And in this work the colleges are playing a prominent part.

Profits

Many concerns prepare a careful analysis of the profit or loss on each line, group or item which they sell. On the other hand it is surprising to see how many manufacturers do not prepare such analyses—or having prepared them do not use them. Needless to state, it is necessary that such information be tabulated and analyzed very carefully, for there are many loss items which are sucking dry the life blood (profits) of a large number of businesses. In several cases recently, dropping of loss items by manufacturers has increased their net profits materially, altho in many instances it has meant a reduction in gross sales.

Style and Appearance

Design or style cuts a big figure today in consumer acceptance of goods. In the case of automobiles, it is one of the most powerful factors in bringing about the tremendous volume of repeat business which is enjoyed. Style or design obsolescence is a stronger incentive for new purchases than wear—in fact, it seems to be the basic answer to the absorption of mass production. It is, therefore, highly important that this subject in all its ramifications be studied in connection with a market survey of any product or commodity which must depend largely upon design or style for consumer acceptance.

To secure the interest of prospective customers it is often desirable for the product or commodity to be displayed or samples offered or demonstration made. These should be carefully planned and carried out so that the maximum results in terms of sales may be obtained.

There is a growing tendency to package most forms of staple bulk goods; even potatoes are now put up in five, ten and fifteen pound cartons and paper and cloth bags—one hundred and twenty pounds of these packaged potatoes sometimes being put into a substantial and effective collapsible wooden crate. Primarily intended as a means of protecting their contents, package containers have served to make the unit of sale smaller to the ulti-

mate consumer, for even he has come to recognize the apparent value in hand-to-mouth buying. But more than this (the package, attractively designed, has increased the sales appeal of hundreds of articles, the unpackaged appearance of which, at best, was drab and uninteresting. The value of improving the appearance of a product and of its package or container should, therefore, be carefully and thoroughly investigated and considered. If it is found desirable to package an article, then the selection of the carton or container should be accomplished in a scientific manner, rather than being based on the opinion or beliefs of a few persons who may be inclined to be biased. The opinions of representative and unprejudiced test groups is generally to be preferred to any other method, as a means of securing an idea of consumer acceptance of products, packages, etc.

Quantities

The quantities sold of each item, group or line must receive careful attention. A multiplicity of items in a line often camouflages an undesirable condition which may only be revealed by a study of the sales of each of the items. The sales of less than six percent of a total of 262 items in a line carried by an electrical concern represented more than eighty percent of the total dollars of sales volume and more than seventy-five percent of the number of items sold. The profit on this six percent of the items for a period of five years, showed an average of nearly ninety percent of the total net profit. Besides this, the factory was constantly disrupted by the necessity for manufacturing the small quantity products at inopportune times, and at relatively high costs. Concentration of sales effort on the large quantity items; elimination of some of the small quantity items, raising of prices on others, and changes of design on the remainder to improve their appeal, combined with a comprehensive sales development program resulted in doubling the profits of this concern within a period of two years.

Uses

It is not at all infrequent to find, after looking into the present uses of the product and the possible new uses or applications of same, that new outlets and new markets may be discovered that had previously been overlooked.

Many times a widely variegated product may be more stable than a single product or line. The combined products of the General Electric Company probably do not have the production and sales peaks and depressions that the Ford Motor Company experiences. Research and investigation is undoubtedly revealing to the General Electric Company that many new products may profitably be added to their line, and many old products may profitably be dropped. Such policies are almost entirely governed by the size, type, character and organization of the concern being studied. Rarely, indeed, is it found that desirable changes may not be made in this direction.

From the foregoing it is readily understood what an important part a study of the product assumes in a new or improved sales development program.

Market

The study of an actual or potential market is made for the purpose of determining *how much* of *what* goods may be sold in a specified market during a given length of time. Many executives will reply that by simply looking at the figures of what have been sold in the past,—and by exercising a little judgment which takes into consideration the calibre of the salesman in that territory, they know what may be accomplished in the future. In many cases, however, a suggested change in methods, salesman, territory, etc. leaves them absolutely at sea concerning a sales forecast which is reasonably accurate. Past performance is helpful, but it is by no means a criterion of future accomplishment, hence should not be given undue emphasis in arriving at a reasonable measure of the capacity of a group of consumers to purchase the articles under consideration.

To intelligently determine, then, *where* the goods shall be sold (to whom)—*how many* should be sold in a given length of time—*when* they shall be sold—*how* they shall be sold (through what distributing channels)—*who* shall sell them (what type of salesman)—what *appeals* to use (both advertising and selling) what *media* to use in advertising—how *often* a salesman shall call—what *prices* shall be charged—and how much it will *cost* to secure this distribution, it is necessary to go out into the highways and byways (buyways) for the purpose of developing a logical and successful plan of procedure.

It is complacently assumed by many executives that certain priced goods cannot be sold in some sections, that certain styled goods cannot be sold in other places, and that certain types of goods cannot be sold at certain seasons. In some cases they are right, but in case after case it was found that people did not buy because they did not know such goods were available, or the proper distributing agencies had not been established, or the merits of the goods were not made known to them.

Electric refrigerators were on the market twelve or fifteen years ago, but to most of us they were as unknown as Saturn. When we began learning about how perfectly they kept food, what a lot of bother and fuss they eliminated, and when we saw them on display in our favorite electric shop, furniture store, and even musical instrument and radio store, and had their various superior qualities pointed out to us, we bought them.

But the manufacturer of electric refrigerators must have a knowledge of what people think about electric refrigeration for the home before he can successfully sell his product. He must know how many families in the various communities can afford them, whether they can be made available to a much larger group through installment buying, what types of distributors can best reach the consuming public, what the eating habits of the various peoples may be, how they usually keep foods cool, what their buying habits are, whether or not they have electricity in their homes, what voltages and types of current are available, and many more facts which have a direct bearing on the possibility of sales.

(To be continued)

Coty Bag Corp. Installs New Equipment

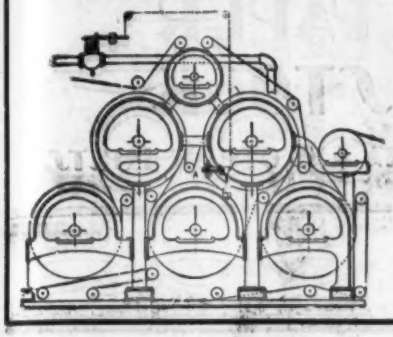
WATERTOWN, N. Y., September 13, 1930.—The Coty Bag Corporation has started night schedules because of the large number of orders being booked and production will be continued with the additional shift until late in the fall at least. A number of orders have been turned away recently because of inability to make immediate delivery shipments and as a result the firm has installed new equipment to speed up production.

During the past few weeks the concern has been turning out all kinds of paper sacks on a recently installed machine which performs several operations in one with considerably greater speed than the average separate process equipment. Officials claim the new machinery is not only labor saving but also much more economical to operate.

Since the new equipment was installed the quality of the bags turned out at the local plant has increased greatly and with the decreased sale prices has stimulated business to such an extent that orders have been flowing in faster than they can be handled. Another complete machine is now being built as rapidly as possible and upon its installation the production will be doubled to 400,000 bags daily, which will require the use of from fifteen to forty tons of paper, depending upon the size of the manufactured bags.

The majority of the contracts now being turned out are for nationally known concerns and are used principally for the packing of chemicals of all kinds, feed and grain, coal, charcoal, carbon, nails, talc, flour, limestone, paints, sugar etc. Plans call for installation of a large number of these new machines in the local factory within the next few years while it is also probable that some arrangements will be made to place them in foreign factories on a royalty basis. Patents were recently granted as a means of protecting the new invention in this country.

The Pickles Drying Regulator



WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

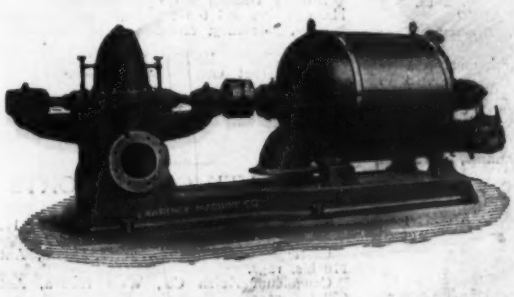
W. F. PICKLES **Buckland, Conn.**

Horizontally Split Casing Double Suction Pumps

LAWRENCE PUMPS

The name protects and guarantees you satisfaction.

We are the original designers and builders of the LAWRENCE PUMP.



Lawrence pumps for all conditions and services. Forty-four years of practical experience with centrifugal pump development places us among the leaders. Our efforts have been rewarded by the acceptance of our product in general.

Thousands of installations and the successful performance of our pumps should be sufficient proof of our ability to handle your pumping problems. Our engineering force is at your command.

Have only Lawrence Pumps, manufactured by the

Lawrence Machine & Pump Company

361 Market St. **Lawrence, Mass.**

Acceptance Financing

INTERNATIONAL ACCEPTANCE BANK, INC.

A Unit of THE MANHATTAN COMPANY

31 Pine Street New York

Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 13, 1930

SUMMARY

Cigarette paper	997 cs.
Wall paper	9 bls., 27 cs.
Paperhangings	5 bls., 2 cs.
Newsprint	1529 rolls
Printing paper	95 bls., 95 cs.
Wrapping paper	70 cs.
Packing paper	3 cs.
Kraft paper	327 rolls, 16 bls.
Colored paper	11 bls., 20 cs.
Drawing paper	5 rolls, 46 cs.
Filter paper	141 bls., 10 cs.
Metal covered paper	58 cs.
Gold coated paper	5 cs.
Coated paper	12 cs.
Surface coated paper	2 cs.
Baryta coated paper	57 cs.
Writing paper	15 cs.
Decalcomania paper	6 cs.
Tissue paper	8 cs.
Stencil paper	18 cs.
Caoutchouc paper	6 cs.
Crepe paper	6 cs.
Straw boards	183 rolls
Miscellaneous paper	945 rolls, 206 bls., 177 cs.

CIGARETTE PAPER

H. H. Strauss, Liberty, Havre, 515 cs.
De Manduit Paper Corp., Liberty, Havre, 482 cs.

WALL PAPER

Universal Car Loading Co., Stuggart, Bremen, 2 cs.
S. Stern Stiner & Co., Stuttgart, Bremen, 2 bls.
Guaranty Trust Co., Hamburg, Hamburg, 11 cs.
W. H. S. Lloyd & Co., Statendam, Rotterdam, 8 cs.; Carinthia, Liverpool, 3 bls.; Samaria, Liverpool, 4 bls.
A. L. Diament & Co., Olympic, Southampton, 6 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 5 bls., 2 cs.

NEWS PRINT

J. Madden Corp., Stuttgart, Bremen, 695 rolls; Schenectady, Helsingfors, 161 rolls; Seydlitz, Bremen, 286 rolls.
Scripps Howard Supply Co., Kungsholm, Gothenburg, 249 rolls.
Perkins Goodwin & Co. Hamburg, Hamburg, 88 rolls.
——, Tonsbergfjord, Oslo, 50 rolls.

PRINTING PAPER

P. C. Zuhlke, Westernland, Antwerp, 5 cs.
P. Puttman, Westernland, Antwerp, 26 cs.
Baldwin Paper Co., Stuttgart, Bremen, 21 cs.
American Express Co., Hamburg, Hamburg, 4 cs.
——, Hamburg, Hamburg, 95 bls.
E. Dietzgem & Co., Statendam, Rotterdam, 31 cs.
E. Henningson Co., Olympic, Southampton, 1 cs.
Keuffel & Esser Co., G. Washington, Hamburg, 3 cs.
Hoboken Trust Co., G. Washington, Hamburg, 4 cs.

WRAPPING PAPER

Standard Products Corp., Westernland, Antwerp, 18 cs.
E. Dietzgen & Co., Statendam, Rotterdam, 52 cs.

PACKING PAPER

Houbigant, Inc., Ile de France, Havre, 3 cs.

KRAFT PAPER

Globe Shipping Co., Fred. VIII, Oslo, 327 rolls, 5 bls.
Wilkinson Bros., Inc., Fred. VIII, Oslo, 11 bls.

COLORED PAPER

S. Gilbert, Stuttgart, Bremen, 19 cs.
F. L. Kramer & Co., Stuttgart, Bremen, 1 cs.
Quality Art Novelty Co., Stuttgart, Bremen, 11 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 3 cs.
E. Dietzgen & Co., Carmania, London, 6 cs.
Keuffel & Esser Co., G. Washington, Hamburg, 37 cs., 5 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 10 cs.
J. Manheimer, Olympic, Southampton, 141 bls.

METAL COVERED PAPER

American Isonia Corp., Stuttgart, Bremen, 37 cs.
K. Pauli Co., Stuttgart, Bremen, 21 cs.

GOLD COATED PAPER

F. Murray Hill Co., Stuttgart, Bremen, 5 cs.

COATED PAPER

Pacific National Bank, Hamburg, Hamburg, 9 cs.
W. A. Foster & Co., Carmania, London, 3 cs.

SURFACE COATED PAPER

Gimbel Bros., Statendam, Rotterdam, 2 cs.

BARYTA COATED PAPER

Globe Shipping Co., Seydlitz, Bremen, 57 cs.

WRITING PAPER

Guibout Freres, Olympic, Southampton, 5 cs.
American Express Co., Liberty, Havre, 3 cs.
Globe Shipping Co., Liberty, Havre, 4 cs.
J. Horne, Ile de France, Havre, 2 cs.
Titan Shipping Co., Ile de France, Havre, 1 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Britannic, Liverpool, 6 cs.

TISSUE PAPER

Meadows Wye & Co., Carinthia, Liverpool, 3 cs.
B. F. Drakenfeld & Co., Britannic, Liverpool, 5 cs.

STENCIL PAPER

——, Stuttgart, Bremen, 18 cs.

CAOUTCHOUC PAPER

American Express Co., Hamburg, Hamburg, 6 cs.

CREPE PAPER

Kleinex Co., American Banker, London, 6 cs.

STRAW BOARDS

Walker Goulard Plehn Co., Statendam, Rotterdam, 183 rolls.

MISCELLANEOUS PAPER

Globe Shipping Co., Rochambeau, Havre, 2 cs.
The Berregaard Co., Kungsholm, Gohenburg, 206 bls., 945 rolls.
Steiner Paper Corp., Statendam, Rotterdam, 11 cs.
Globe Shipping Co., Statendam, Rotterdam, 45 cs.
Keller Dorian Paper Co., Ile de France, Havre, 6 cs.
American Express Co., Ile de France, Havre, 100 cs.
Coenca Morrison Co., Ile de France, Havre, 9 cs.
Japan Paper Co., Ile de France, Havre, 4 cs.

RAGS, BAGGINGS, ETC.

——, Caledonia, Glasgow, 65 bls. paper stock.
Castle & Overton, Inc., Statendam, Rotterdam, 200 bls. bagging.
Argus, Inc., West Eldara, Antwerp, 52 bls. rags.
Guaranty Trust Co., E. Francqui, Antwerp, 44 bls. rags.
Darmstadt Scott & Courtney, Liberty, Dunkirk, 94 bls. rags.
E. J. Keller Co., Inc., Liberty, ——, 105 bls. flax waste.
Brown Bros. & Co., Bannack, Manchester, 40 bls. new cuttings.
Banco Com'l Italiane Trust Co., Heina, Savona, 114 bls. bagging.
E. J. Keller Co., Inc., Cabo Villano, ——, 48 bls. rags; Marengo, ——, 63 bls. rags
Van Oppen & Co., Marengo, Antwerp 24 bls. rags; 94 bls. bagging.
Darmstadt Scott & Courtney, Exmouth, Genoa, 39 bls. bagging.

OLD ROPE

International Trust Co., Statendam, Rotterdam, 74 rolls.
Irving Trust Co., G. Washington, Hamburg, 47 bls.
——, Laura C., Trieste, 68 coils.

PULPWOOD

Chase National Bank, Wearpool, Archangel, 3,457 cords; Dailpen, Archangel, 3073 cords; Peebles, Archangel, 3,513 cords; Guldborg, Archangel, 3,521 cords.

WOOD PULP

E. J. Keller Co., Inc., G. Washington, ——, 592 bls. wood pulp.
Johanson Wales & Sparre, Inc., Kungsholm, Gothenburg, 1625 bls. sulphate; 160 bls. chemical pulp.
Parsons & Whittemore, Inc., Kungsholm, Gothenburg, 750 bls. sulphite.
Perkins, Goodwin & Co., Kungsholm, Gothenburg, 91 bls. sulphate.
Price & Pierce, Ltd., Schenectady, Wallvik, 450 bls. sulphite, 75 tons.
Pagel Horton & Co., Inc., Schenectady, Gefle, 3,500 bls. wood pulp, 711 tons.
Stora Kopperberg, Corp., Schenectady, Skutskar, 775 bls. wood pulp.
Bulkley Dunton & Co., Schenectady, ——, 4025 bls. sulphite, 805 tons; 500 bls. sulphate, 100 tons.
——, Hamburg, Hamburg, 128 bls. sulphite, 25 tons.

WOOD FLOUR

The Burnet Co., Statendam, Rotterdam, 1,000 bags.
State Chemical Co., Statendam, Rotterdam, 920 bags.
A. Kramer & Co., Statendam, Rotterdam, 300 bags.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 13, 1930

Castle & Overton, Inc., West Eldara, Antwerp, 110 bls. rags.
Congoleum Nairn Co., West Eldara, Antwerp, 698 bls. rags.
Katzenstein & Keene, Inc., West Eldara, Antwerp, 447 bls. rags.
F. Stern, West Eldara, Antwerp, 239 bls. rags.
Katzenstein & Keene, Inc., Liberty, Dunkirk, 472 bls. rags.
Congoleum Nairn Co., Liberty, Dunkirk, 90 bls. rags.
J. Horne, Liberty, Havre, 2 cs. writing paper.
Chase National Bank, Liberty, Havre, 179 cs. cigarette paper.
Bulkley Dunton & Co., Kolsnaren, 1,290 bls. wood pulp; America, ——, 1,300 bls. wood pulp; Binnendyk, ——, 1,450 bls. wood pulp; Etna, ——, 3,000 bls. wood pulp; Legie, ——, 2,500 bls. wood pulp.

BOSTON IMPORTS

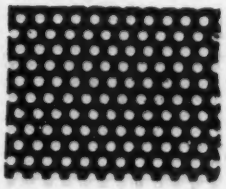
WEEK ENDING, SEPTEMBER 13, 1930

Bulkley Dunton & Co., Schenectady, ——, 750 bls. wood pulp, 150 tons.
Price & Pierce, Ltd., Schenectady, Wallvik, 5,250 bls. sulphite, 875 tons; 1,200 lbs. sulphate, 200 tons.
Pagel Horton & Co., Inc., Schenectady, Gefle, 875 bls. wood pulp, 177 tons.
Stora Kopperberg, Corp., Schenectady, Skutskar, 1,775 bls. wood pulp.
Irving Trust Co., Schenectady, Hernosand, 3,000 bls. sulphate, 500 tons; 300 bls. sulphite, 50 tons.
Perkins Goodwin & Co., Schenectady, Obbola, 4,375 bls. sulphate, 625 tons.
Atterbury Bros., Inc., The Angeles, B. Ayres. 834 bags casein, 50,040 kilos.
First National Bank of Boston, The Angeles, B. Ayres, 834 bags casein, 50,040 kilos.
New England Waste Co., Norwegian, Manchester, 99 bls. bagging.
E. Butterworth & Co., Inc., Norwegian, Manchester, 16 bls. old paper; 330 bags hide cuttings.
Baring Bros. & Co., Norwegian, Manchester, 45 bags pickers; 60 bls. new cuttings; 178 bags hide cuttings.
Brown Bros. & Co., Norwegian, Liverpool, 68 bls. old rope.
Baring Bros. & Co., Norwegian, Liverpool, 39 bags hide cuttings.

(Continued on page 76)

Perforated Metal Screens

For Pulp and Paper Mills



STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

".065" Round

CHARLES MUNDT & SONS

63-65 FAIRMONT AVE. JERSEY CITY, N. J.

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JUTE BUTTS, MAGAZINES, CATALOGS, OLD PAPERS, THREAD WASTE AND ALL GRADE OF RAGS CUT QUICKLY AND EFFICIENTLY WITH THE

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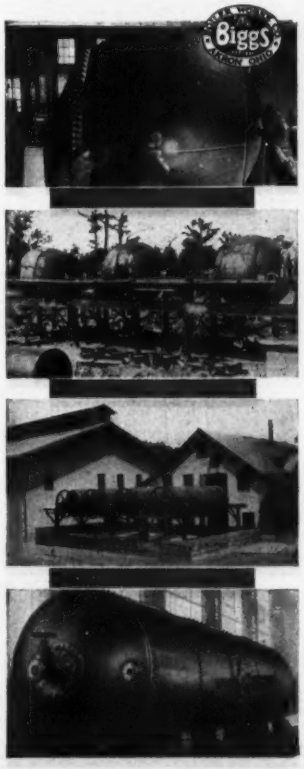

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Imports of Paper and Paper Stock

(Continued from page 74)

E. Butterworth & Co., Inc., Norwegian, Liverpool, 62 bls. old rope; 67 bags hide cuttings.
Parsons & Whittemore, Inc., Samaria, Liverpool, 2 cs. tissue paper.
Brown Bros. & Co., Marengo, Hull, 376 bls. old rope.
First National Bank of Boston, Marengo, Antwerp, 40 bls. rags.
Spaulding Fibre Co., Marengo, Antwerp, 1,000 bls. flax waste.
G. W. Millar & Co., Marengo, Antwerp, 75 bls flax waste.
Elliott & Co., Marengo, Antwerp, 8 cs. drawing paper; 34 bls. bagging.
Stone & Forsyth Co., Marengo, Antwerp, 22 bls. bagging.
Chase National Bank, Marengo, Antwerp, 22 bls. rags.
International Trust Co., Marengo, Antwerp, 180 bls. bagging.
International Purchasing Co., Exmouth, Genoa, 153 bls. old rope.
Bulkley Dunton & Co., Korsholm, ——, 5,500 bls. wood pulp; America, ——, 2,400 bls. wood pulp; Toronto, ——, 2,600 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING SEPTEMBER 13, 1930

Darmstadt Scott & Courtney, West Eldara, Antwerp, 85 bls. bagging; 96 bls. rags; West Eldara, Rotterdam; 173 bls. bagging.
E. J. Keller Co., Inc., West Eldara, ——, 68 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 13, 1930

J. Wallworth & Sons, Norwegian, Manchester, 15 bls. new cuttings.
Baring Bros. & Co., Norwegian, Manchester, 67 bls. bagging.
F. Weber, Norwegian, Liverpool, 1 cs. drawing paper.
E. J. Keller Co., Inc., Cabo Villano, ——, 175 bls. bagging; Wytheville, ——, 138 bls. rags; Exermont, 346 bls. rags; London Exchange, ——, 86 coils old rope.

PORTLAND, ME., IMPORTS

WEEK ENDING SEPTEMBER 13, 1930

Pagel Horton & Co., Inc., Schenectady, Hornefors, 3,000 bls. sulphite, 508 tons.
Bulkley Dunton & Co., Korsholm, ——, 1,375 bls. wood pulp.

Paperboard Industries Groups to Meet

The next meetings of the Paperboard Industries Association and of the Trade Practice Division will be held at the Drake Hotel, Chicago, on September 23, 24 and 25. The September meetings are of more than ordinary importance inasmuch as the nominating committees will be appointed at that time. Each of the three Paperboard Industries Association groups will appoint two members to serve on the Presidential Nominating Committee which committee of six will nominate a president to be elected at the November (Annual) meeting in New York City. The individual groups will also appoint nominating committees to submit nominations for group officers for election at the annual meeting.

Tuesday, September 23, has been set aside for various committee meetings. The sales Promotion, Statistical and Standardization Committees and the Paperboard Industries Association will meet at 10 a.m. as will the Trade Practice Administration Industry Committees. The Trade Practice board of directors will meet immediately following this latter meeting and the P. I. A. executive committee at 1:30 p.m.

A schedule of the regular meetings shows the Paperboard Group meeting on Wednesday, September 24, between 9:30 a.m. and noon; the Folding-Box-Group meeting on the same day between 1 and 2 p.m. and the Container Group, also on Wednesday, between 2:30 p.m. and 4:30 p.m. A luncheon for all members will be held at noon. On Thursday, September 25, a general meeting, including the Trade Practice Session, will be held from 9 a.m. until noon. Gilbert H. Montague, Trade Practice Counsel, will attend this meeting.

Thomas M. Royal & Co. Employees Insured

NEW YORK, N. Y.—More than 300 employees in the head office of Thomas M. Royal & Co., paper bag manufacturer, at Philadelphia, and branch workers in Bryn Mawr, Pa., have accepted their employer's offer to share with them the cost of a $385,000 group life insurance program. The contract is being underwritten by the Metropolitan Life Insurance Company.

Individual amounts of life insurance, which range from $1,000 to $5,000 are based on occupation. Total and permanent disability benefits are featured in the plan. Under this clause of the life policy, an employee suffering complete disability before age 60, will receive the full amount of his life insurance, with interest, in monthly installments.

In addition to the actual protection provided, insured employees are offered the advantages of a visiting nurse service when sick or injured and under the care of a physician.

Southern Kraft Corp. Lets Contracts for Docks

PANAMA CITY, Fla., September 15, 1930.—Contract was let Tuesday, September 2nd to Doullut & Ewin of New Orleans for construction of the huge municipal docks, by the Southern Kraft Corporation, which are to be built in connection with the paper mill in Bay Harbor that is being rushed to completion and these docks are scheduled to be completed at the time the mill is completed and be ready for shipment purposes.

The docks are to be 400 feet in length, 90 feet wide, with composition construction of copper and steel sheeting with copper bearing sheet piling and so designed to accommodate vessels having draft of 26 feet or any type of trans-Atlantic ones. This particular construction to be used for these docks selected for the durability and for the fact that there is not any better ever been designed.

For the present there will not be any machinery installed for loading and unloading purposes, but it is hoped as time advances this will be brought about and as needed in the course of affairs will become a part of the docking facilities. A warehouse will be built which is to be 340 feet in length and as wide as the docks, which has already been mentioned as being approximately 90 feet.

Work is scheduled to start at once on these docks, the grade work has been finished and everything is ready for the construction company to take hold and go right ahead. They will no doubt be busily engaged for the next few days in shipping their equipment in on the location and other preliminary matters prior to making the wheels of this great job revolve into action.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 17, 1930—The Government Printing Office has received the following bids for 5,000 pounds of gummed kraft paper in 24-inch rolls, in two weights; Old Dominion Paper Company, at 9.4 cents and 9.4 cents per pound; Barton, Duer & Koch Paper Company, 12 cents and 10.75 cents; Cauthorne Paper Company, 8.08 cents and 8.08 cents; Virginia Paper Company, 12.5 cents and 11.5 cents; Nashua Gummed and Coated Paper Company, 10.25 cents and 8.25 cents; and Charles G. Stott & Company, 10.45 cents and 9.42 cents.

The following bids were also received for 36,000 pounds of No. 2 34 x 44 binders board; R. P. Andrews Paper Company, at 3.5 cents per pound; and Dobler & Mudge, at 3.5 cents.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 17, 1930.

Trading in the local paper market was slightly more active during the past week. Supplies are beginning to move into consumption in heavier volume. Sales forces of the leading paper organizations are fairly optimistic and anticipate improved business from now on to the end of the year. Prices are generally holding to formerly quoted levels.

Conditions in the news print market are little changed. During August Canadian mills operated at 66.4 per cent of capacity, United States mills at 72 per cent, and Newfoundland mills at 103 per cent. Stocks at the mills totalled 89,698 tons at the end of August, which was equivalent to 5.2 days average output, according to information gathered by the News Print Service Bureau.

Competition in the box board market, due to over production, has resulted in a decline of $5 per ton in quotations, throwing the industry into an even more chaotic position than before. The fine paper market is fairly steady and demand for the various grades is persistent. Tissues are moving in seasonal volume. The coarse paper market is rather spotty.

Mechanical Pulp

While demand for both domestic and imported ground wood pulp is only moderately active the market is in a fairly sound position. Production both here and abroad has been curtailed somewhat and accumulations are not excessive. Prices are generally holding to formerly quoted levels and there is not much talk of concessions around.

Chemical Pulp

Demand for the various grades of chemical pulp is somewhat restricted. Some desirable orders, however, have been booked for 1931 delivery and there are a fair number of inquiries around. Offerings are sufficient to take care of current requirements. The outlook for the future is fairly encouraging. Prices are holding to schedule, in most instances.

Old Rope and Bagging

The old rope market is rather quiet and prices are easy. Domestic old manila rope is quoted at from $3.50 to $3.75 and imported old manila rope is selling at from $3.00 to $3.10. Small mixed rope is selling at from $1.15 to $1.25. The bagging market is fairly steady. Gunny is in seasonal request and scrap bagging is moving in good volume.

Rags

Most of the business transacted in the local domestic rag market was along routine lines. Demand for cotton cuttings was fairly active. Roofing stock is in slightly improved request. The mixed rag market is dull. Conditions in the imported rag market are practically unchanged and prices abroad are still considered high.

Waste Paper

Paper mill interest in the higher grades of paper stock is well maintained. Soft white shavings and hard white envelope cuttings are exhibiting a strong undertone with prices ruling firm. Book stock continues fairly steady. The lower grades of waste paper are in slightly better request although prices are irregular.

Twine

During the past week, business in the local twine market showed some signs of revival after the seasonal vacation slump. Twine manufacturers and dealers are anticipating an expansion of business during the closing months of the year in conjunction with the usual increased demand for wrapping paper. The price situation is practically unchanged.

Standardization Committee to Submit Findings

The American Paper and Pulp Association is trying to find a way to save money on sampling and to increase its efficiency. Dealers, printers and users complain that the varying sizes, shapes and colors of samples, make it difficult and sometimes impossible to maintain an adequate file; the duplication of mailings by various dealers and the mill results in an unnecessary waste; many packages of samples and promotional material lie unused in dealers' warehouses for lack of any recognized system or standards; the intermixture of samples and promotional material, the difficulty of distinguishing between them, results in much reference material being thrown away.

There can be no effective standardization of samples until there is a generally recognized standard filing system to which all samples can be made to conform.

The Standardization Committee of the American Paper and Pulp Association will hold a meeting in New York on September 19 which will be attended by representatives of all interested parties to the problem, to obtain their viewpoints and wishes. After a thorough investigation it will submit its findings and recommendations to the mills in all grades affected, for their advice and comments.

The meeting will be attended by representatives of the National Purchasing Agents Association, National Paper Trade Association, National Advertisers, the Direct Mail Advertisers Association, Printing Estimators Club, United Typothetae of America, and several individuals without official connections who have data of value to submit.

Robert C. Fay of the American Writing Paper Company, Holyoke, Mass., is chairman of the committee.

Scott Paper Sales For Eight Months

The Scott Paper Company, Chester, Pa. in the eight months ended Aug. 30 had net profit of $617,628 after charges and taxes equal, after allowance of $107,045 for preferred dividends, to $3.21 a share on 158,909 shares no-par common, against $557,587 in the like period of 1929, equal after preferred dividend of $108,967 to $2.82 a share on the same number of common shares.

Sales were $5,459,414, against $4,974,305.

Maryland Paperboard Co. Formed

BALTIMORE, Md., September 15, 1930.—Maryland Paperboard Company has filed certificate of incorporation under the laws of Maryland. Company has total authorized capitalization of $100,000 divided into 10,000 shares of the par value of $10 each. The company will purchase, manufacture, sell and otherwise deal in paper and fiber board.

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 17, 1930.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Contract shipments are moving in fair volume. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is mostly along routine lines. The contract movement is fairly satisfactory for the time of year. Prices are generally holding to schedule. Bleaching powder is still quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—The casein market is rather quiet at present. Domestic standard ground is still quoted at 13½ cents and finely ground at 15 cents per pound. Argentine standard ground is selling at 13½ cents and finely ground at 14½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Some improvement was noticed in the caustic soda market. The contract movement was well up to average. Solid caustic soda is still quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market continues to exhibit a strong undertone. Contract shipments are going forward to the paper mills in good volume. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. Shipments against contract are moving at a normal pace. Prices remain unaltered. Chlorine is quoted at from $2.40 to $2.45 per 100 pounds, in tanks, or multi-unit cars; in ton lots, or over, at works.

ROSIN.—The rosin market was moderately active, with prices unchanged. The grades of gum rosin used in the paper mills are quoted at from $6.10 to $6.15 per 280 pounds, in barrels, at yard. Wood rosin is still selling at $4.10 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Steadiness prevails in the salt cake market. Supplies are moving into consumption in good volume for the season. Prices remain unchanged. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—Trading in the salt cake market is moderately active. Production is being maintained in sufficient volume to take care of current requirements. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55 per 100 pounds.

STARCH.—The starch market is displaying a steadier trend. Demand from the paper mills is mostly along routine lines. No further price changes have been recorded. Special paper making starch is quoted at $3.77, in bags, and at $4.04 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Supplies of sulphate of alumina are moving into consumption in satisfactory volume for the season. Prices are generally holding to schedule. Commercial grades are quoted at from $1.40 to $1.55, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Prices remain unchanged. Sulphur is quoted at $18 per ton, at mine, on orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads the quotation is $21 per ton.

TALC.—Slight improvement was noticed in the demand for talc. The contract movement is fairly heavy. Prices are generally holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, in bulk, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	9.00	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	8.00	@	11.00
Book, Cased—			
S. & S. C.	6.00	@	7.50
M. F.	5.75	@	7.00
Coated and Enamel	7.50	@	12.00
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.75	@	1.00
Anti-Tarnish	1.35	@	1.90
Colored	1.00	@	2.00
White No. 2	.75	@	.80
Kraft	1.00	@	1.10
Manila	.75	@	.80
Kraft—			
No. 1 Domestic	5.75	@	6.25
No. 2 Domestic	3.75	@	5.00
Southern	3.50	@	4.50
Imported	6.50	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.25
No. 2 Wood	4.00	@	4.50
Butchers	3.75	@	4.25
Fibre Papers—			
No. 1 Fibre	5.00	@	5.50
No. 2 Fibre	4.75	@	5.25
Common Bogus	2.75	@	3.00
Screenings	3.00	@	3.25
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs.	13.00	@	16.00
Bleached, basis 20 lbs.	15.00	@	16.00

(Delivered New York)

News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	30.00	@	—
Straw	44.00	@	—
Chip	27.50	@	—
Binders' Boards	65.00	@	70.00
100 Test Jute Liner	37.50	@	40.00
85 Test Jute Liner	47.50	@	50.00
Sgl. Mla. Ll. Chip	47.50	@	50.00
Wood Pulp Boards	75.00	@	80.00

(F. o. b. Mill)

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	28.00	@	30.00
Dry	30.00	@	32.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@	30.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.00	@	4.25
Easy Bleaching	2.60	@	2.80
No. 1 strong unbleached	2.30	@	2.65
Mitscherlich unbleached	2.40	@	2.85
No. 2 strong unbleached	2.20	@	2.35
No. 1 Kraft	1.65	@	2.15
No. 2 Kraft	1.55	@	1.65
Sulphate—			
Bleached	3.40	@	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—			
Bleached	2.65	@	4.75
Easy Bleaching Sulphite	2.55	@	2.75
News Sulphite	2.35	@	2.60
Mitscherlich	2.75	@	3.25
Kraft (Domestic)	2.10	@	3.30
Soda Bleached	2.90	@	3.20

Domestic Rags

New Rags

(Prices to Mill f. o. b N. Y.)

Shirt Cuttings—			
New White, No. 1	8.75	@	9.25
New White, No. 2	7.25	@	7.75
Silesias No. 1	6.75	@	7.00
New Unbleached	9.50	@	10.00
New Blue Prints	5.25	@	5.50
New Soft Blacks	4.50	@	5.00
Blue Overall	6.75	@	7.25
Washables	4.25	@	4.75
Fancy	4.75	@	5.25
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	8.00	@	8.50
O. D. Khaki Cuttings	5.15	@	5.75
Men's Corduroy	3.75	@	4.25
New Mixed Blacks	3.50	@	3.75

Old Rags

White, No. 1—			
Repacked	5.50	@	6.00
Miscellaneous	4.50	@	5.00
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	@	2.75
St. Soiled, White	2.00	@	2.15
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.50	@	1.60
No. 1	1.50	@	1.60
No. 2	1.15	@	1.25
No. 3	1.10	@	1.20
No. 4	1.00	@	1.10
No. 5A	.90	@	1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@	3.00
New Mixed Cuttings	2.25	@	2.75
New Light Silesias	6.75	@	7.00
Light Flannelettes	6.75	@	7.25
Unbleached Cuttings	9.00	@	9.50
New White Cuttings	9.00	@	9.50
New Light Oxfords	7.00	@	7.50
New Light Prints	5.00	@	5.50

Old Rags

No. 1 White Linens	7.25	@	8.00
No. 2 White Linens	5.75	@	6.75
No. 3 White Linens	4.75	@	5.25
No. 4 White Linens	3.00	@	3.50
No. 1 White Cotton	5.50	@	6.25
No. 2 White Cotton	4.50	@	5.00
No. 3 White Cotton	3.00	@	4.00
No. 4 White Cotton	1.75	@	2.10
Extra Light Prints	2.75	@	3.00
Ord. Light Prints	2.15	@	2.40
Med. Light Prints	1.80	@	2.00
Dutch Blue Cottons	2.15	@	2.30
French Blue Linens	2.65	@	2.75
German Blue Linens	2.30	@	2.50
German Blue Cottons	1.90	@	2.00
Checks and Blues	1.75	@	1.90
Lindsay Garments	1.30	@	1.40
Dark Cottons	1.00	@	1.10
Old Shopperies	.90	@	1.00
New Shopperies	.95	@	1.05
French Blues	1.95	@	2.05

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.65	@	1.75
Domestic	1.65	@	1.75
Wool Tares, light	1.40	@	1.50
Wool Tares, Heavy	1.40	@	1.50
Bright Bagging	1.35	@	1.45
Small Mixed Rope	1.15	@	1.25
Manila Rope—			
Foreign	3.00	@	3.10
Domestic	3.50	@	3.75
New Burlap Cut	2.25	@	2.50
Hessian Jute Threads—			
Foreign	3.50	@	4.00
Domestic	3.25	@	3.50

Old Waste Papers

(F. o. b. New York)

Shavings—			
Hard, white, No. 1	3.00	@	3.25
Hard, white, No. 2	2.40	@	2.55
Soft, white, No. 1	2.80	@	2.90
White envelope cuttings	2.90	@	3.10
Flat Stock—			
Stitchless	1.30	@	1.40
Overissue Mag.	1.30	@	1.40
Solid Flat Book	1.20	@	1.30
Crumpled No. 1	.90	@	1.00
Solid Book Ledger	2.00	@	2.10
Ledger Stock	1.30	@	1.40
New B. B. Chips	.35	@	.45
Manilas—			
New Env. Cut.	2.40	@	2.60
New Cuttings	1.50	@	1.75
Extra No. 1 old	1.25	@	1.35
Print	.60	@	.65
Bogus Wrapper	.60	@	.65
Container	.40	@	.50
Old Kraft Machine—			
Compressed bales	1.45	@	1.55
News—			
No. 1 White News	1.77	@	1.87
Strictly Overissue	.50	@	.55
Strictly Folded	.35	@	.40
No. 1 Mixed Paper	.25	@	.30
Common Paper	.15	@	.20

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without removing them

The Eastwood "Perfection" Globe and Angle Valves are practically indestructible. This is because you can remove seating surface, when it shows signs of wear after long service, and regrind. The valve itself stays in the line. *All* parts are renewable, including the disc and seat ring. Maintenance costs are very low.

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500 Tons Daily
We will be glad to send you samples—

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrappings, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06¼
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¾	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	5.00	@	5.50
Southern Kraft	3.75	@	4.00
No. 2 Kraft	3.75	@	4.00
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¾	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cut-			
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.30	@	.35
No. 2 Mixed	.25	@	.35
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.30	@	1.40
New Kraft Cuts	1.50	@	1.70
Manila Envelope Cuttings	1.65	@	1.70
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.45	@	.50
Folded News (over-issue	.40	@	.45
Old Newspapers—			
No. 1	.35	@	.40
No. 2	.30	@	.35
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.03½	@	.05½
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¾	@	.06¼
No. 2 Kraft	.03¾	@	.04½
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.03½
Common Bogus	.03¼	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	38.50
Chip Board	32.50	@	35.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.50
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.60	@	.70
Solid Ledger Stock	1.55	@	1.65
Writing Paper	1.05	@	1.25
No. 1 Books, heavy	1.00	@	1.20
No. 2 Books, light	.90	@	1.00
No. 1 New Manila	2.15	@	2.30
No. 1 Old Manila	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.45	@	.50
Old Kraft	1.35	@	1.40
Common Paper	.25	@	.35
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Corrugated Board	.50	@	.60
Overissue News	.45	@	.50
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	6.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.25	@	1.30
Repacked	.80	@	.90
No. 2	.70	@	.75
No. 3 (Roofing)	.30	@	.40
No. 4	.30	@	.40
No. 5A	.70	@	.75
B	.40	@	.60
C	.25	@	.30

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	.06
No. 2 Kraft	.03¾	@	.05
(Less car-freight to Boston)			
Southern Kraft	.03¾	@	.04¼
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¼
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	32.50	@	—
Chip Board	30.00	@	—
Chip Board (Special)	32.50	@	—
Single Manila Lined Chip	45.00	@	—
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	—	@	2.25
No. 1 Books, Heavy	1.00	@	—
No. 1 Books, Light	.85	@	—
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.35	@	1.45
Print Manila	.75	@	.80
No. 1 Mixed Paper	.20	@	.25
Overissue News	.45	@	.50
Old Newspapers	.37½	@	.40
Box Board, Chip	.50	@	.55
Corrugated Boxes	—	@	.45

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.65
Domestic	1.50	@	—
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	—	@	3.50
Transmission Rope	2.35	@	2.50
Mixed Strings	.90	@	1.00
Jute Wool Strings	.90	@	1.00
Jute Carpet Threads	1.00	@	1.10
Scrap Burlaps	1.25	@	1.40
Scrap Sisal	1.50	@	1.65
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.75	@	2.00
Australian Wool Pouches	2.25	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.08	@	.08½
New White No. 2	—	@	.06
Silesias No. 1	.06	@	.06¼
New Unbleached	—	@	.09¼
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.25	@	1.50
No. 2	.90	@	1.00
No. 3	.85	@	.90
No. 4	.75	@	.85

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.95	@	1.00
New No. 1 Shirt Cuttings	8.50	@	9.00
Dutch Blues	2.25	@	2.50
Lace Curtains	4.50	@	4.75
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.20	@	—

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.00	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
White, No. 2	2.00	@	2.25

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	30.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	72.50	@	75.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writ-			
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¼	@	.10
Fancy Shirt Cuttings	.06	@	.06¼

Advertising matter paged consecutively with text, has been removed here to lessen the bulk of this volume.

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-NINTH YEAR

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TABLE OF CONTENTS

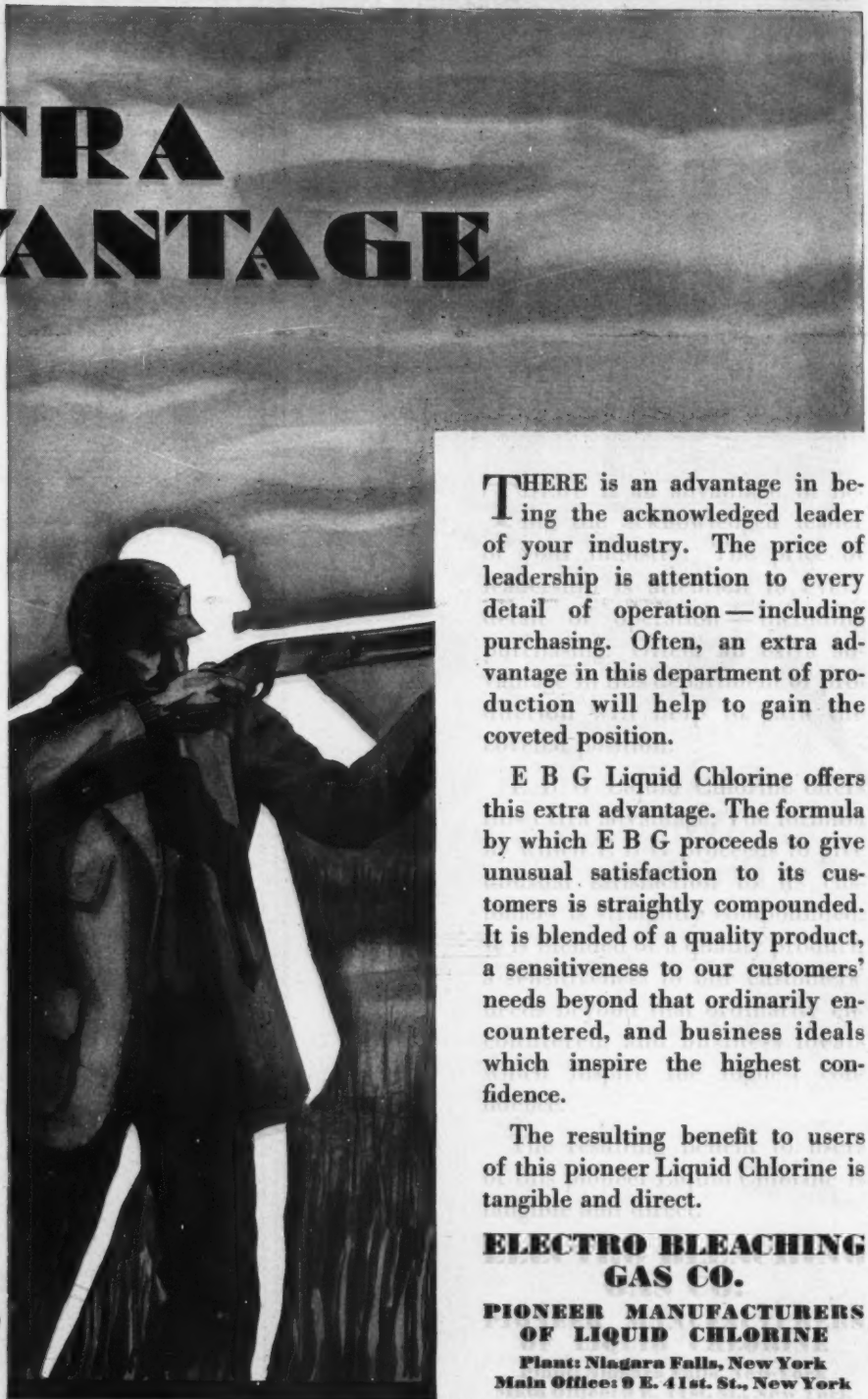
Copyright, 1930, by the Lockwood Trade Journal Co., Inc.

Hearst Buys Stock in Canada Power 21
T. G. Taylor to Promote $3,000,000 Enterprise . 21
Mead Corp. Lists Preferred Stock 21
Canadian Tariff Affects Paper Industry 22
Changes in General Tariff 22
By-Products from Wood Pulp 23
Champion Coated Paper Co. Files Answer 23
New Transcello Mill to Start Operation 24
Imported Water Power Decision 24
Chicago Paper Business Improving 28
Consolidated Wood Room Nearly Ready 28
Finnish Markets Quiet 28
Philadelphia Demand Slowly Improving 30
Ontario Mills to Benefit by New Tariff 34
Safety Matters in Northern Mills 34
Wholesale Price Index for Paper 36
Western Hemlock 38
Salvage and Reclamation Div. to Meet 40
Obituary 42
New York Trade Jottings 44
New Machine for Cleaning Pulpwood 44
Construction News 46
Editorial **48**
Olympic Products Issues Gold Notes 49
James MacLaren Installs Chemipulp 49
Technical Section
Apparatus for Determination of Viscosity of Cellulose in Cuproammonium Solution ... 51
Tappi Notes 52
The Manufacture of Carbon Paper 53
Standard for Abrasive Wheels 54
A New Pyrometer 55
A Study of Old Newspapers 56
Current Paper Trade Literature 57
Cost Section **61**
Census of Envelope Manufacturers 64
Imports of Rags and Paper Stock 66
New York Market Review **70**
Miscellaneous Markets **72**
Market Quotations **72**

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 75, 76, 77, 78

THE EXTRA ADVANTAGE



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